

AUDIO VIDEO SURROUND RECEIVER

KR-V999D/1090VR

SERVICE MANUAL

KENWOOD

© 1997-4/B51-5303-00 (K/K) 3513

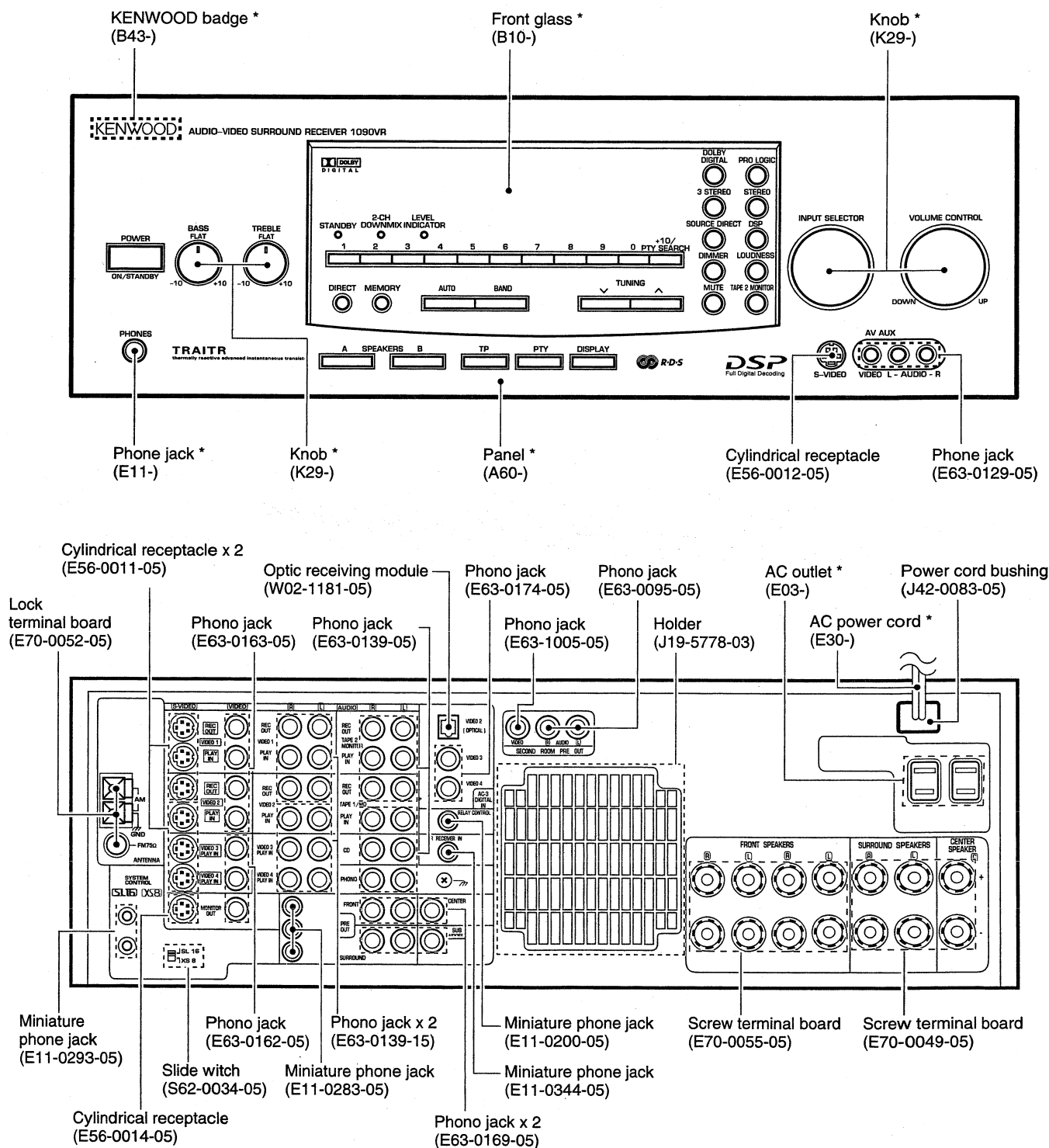


Illustration is KR-1090VR.

* Refer to parts list on page 67.

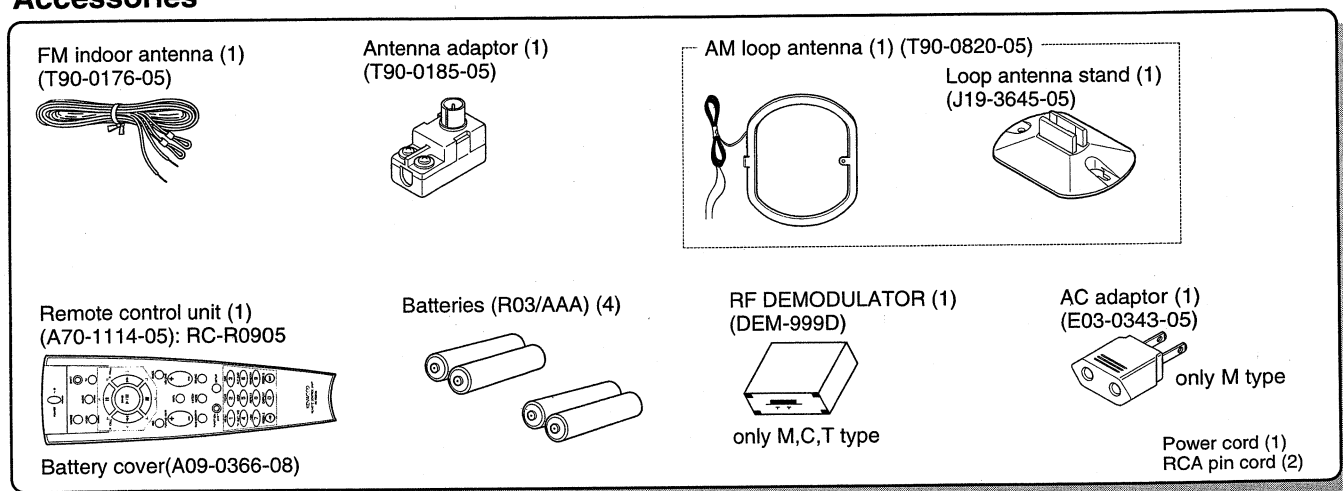
KR-V999D/1090VR

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Accessories

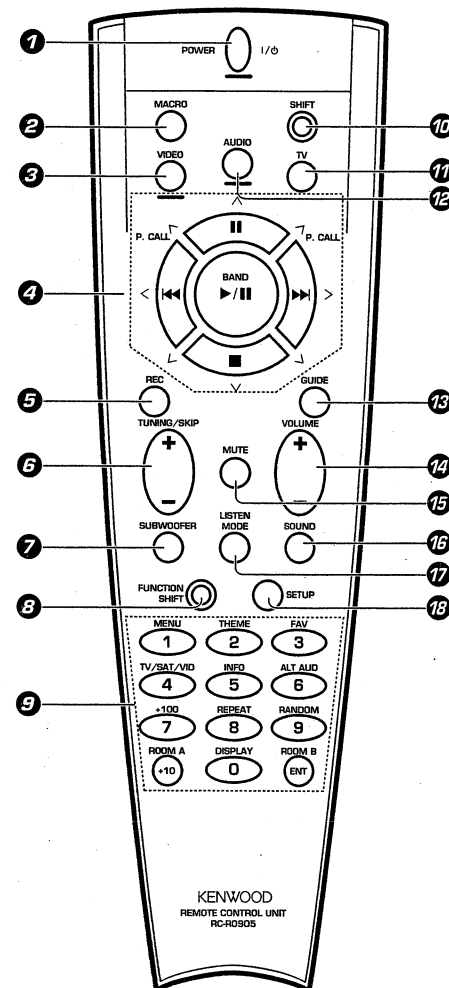


Refer to service manual of model names **DEM-999D(part number B51-5294-00)**, when **RF DEMODULATOR(DEM-999D)** is repaired.

1090VR is a model name of case that the destination of **KR-V999D** is KPY.

In a circuit explanation part, **1090VR** is expressing as **KR-V999D**.

REMOTE CONTROL OPERATION

**1 POWER key**

Use to turn the receiver on and off.
Use in combination with the input selector (AUDIO, VIDEO, or TV) keys and SHIFT key to turn various components on and off.

2 MACRO key

Use in combination with the AUDIO, VIDEO, or TV keys to execute a series of commands automatically (MACRO PLAY).

3 VIDEO selector key

Selects the video inputs (VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4, AV AUX) and sets the remote to operate the component registered at the respective input.

4 Multi control keys

Use to operate the selected component and to operate the on-screen display.

5 REC key

Use to operate the selected component.

6 TUNING/SKIP key

Use during the setup procedure to specify various settings. Use to operate the tuner or selected component.

7 SUBWOOFER key

Use in combination with the VOLUME +/- keys to adjust the volume of the subwoofer.

8 FUNCTION SHIFT key

Use in combination with the numeric keys to execute alternate commands.

9 Numeric keys

Provide functions identical to those of the original remote supplied with the component you are controlling.
To access the functions printed above the keys, Press within 3 seconds of pressing the FUNCTION SHIFT key. Function availability varies for each component.

10 SHIFT key

Use in combination with the AUDIO and VIDEO keys to change the remote control mode without changing the input selector or in combination with the POWER key to turn on and off components programmed into the remote.

11 TV selector key

Sets the remote to operate a TV or cable box (TV 1, TV 2, CABLE). This key does not change the input selector on the receiver.

12 AUDIO selector key

Selects the audio inputs (CD, TAPE1/MD, TUNER, PHONO) and sets the remote to operate the respective KENWOOD audio component.

If you connect audio components from KENWOOD and other makers to the TAPE1/MD or CD jacks, you can set the remote to operate these components by registering the appropriate setup code at the respective input.

13 GUIDE key

Use to activate the OSD menu functions of registered components.

14 VOLUME key

Use to adjust the receiver volume.

15 MUTE key

Use to temporarily mute the sound.

16 SOUND key

Use to activate the Sound OSD and set the remote to OSD control mode.

17 LISTEN MODE key

Use to select the desired surround mode.

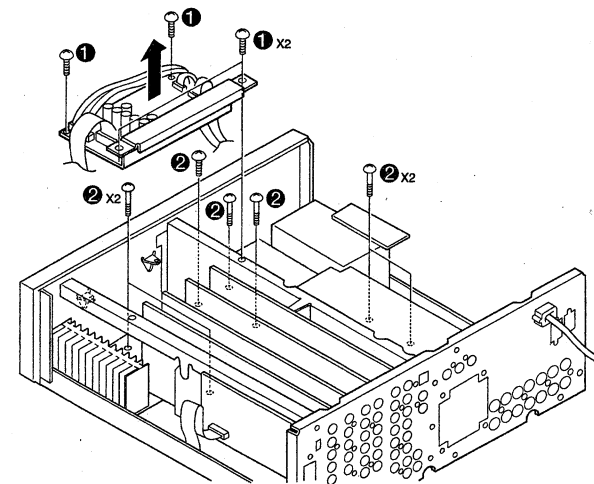
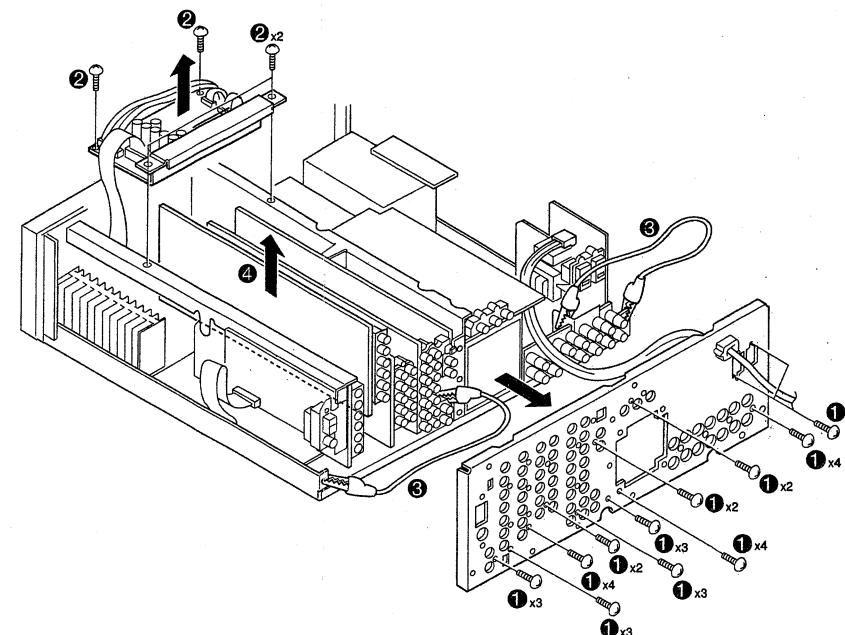
18 SETUP key

Use to activate the Setup OSD and set the remote to OSD control mode.

DISASSEMBLY FOR REPAIR

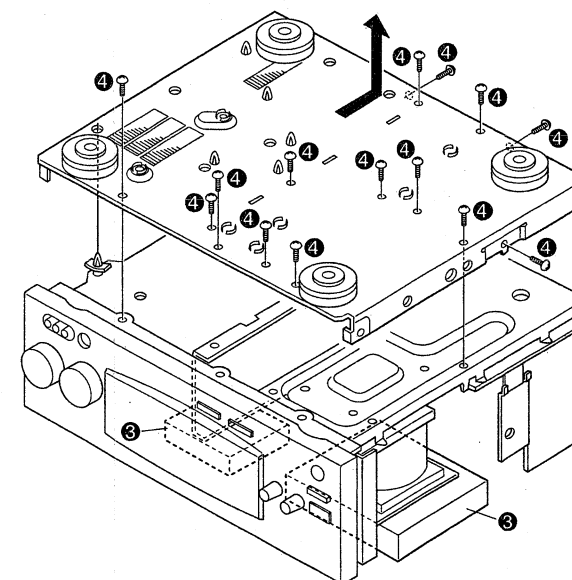
Check the vertical PCB.

1. Remove the 32 screws (1), then remove the rear panel.
2. Remove the 4 screws (2), then remove the fuse PCB.
3. Connect the GND of the vertical PCB and the chassis, the GND of the speaker terminal and the chassis with 2 alligator clip (3).
4. Remove a vertical PCB (4), then check the vertical PCB.

**Remove the bottom plate.**

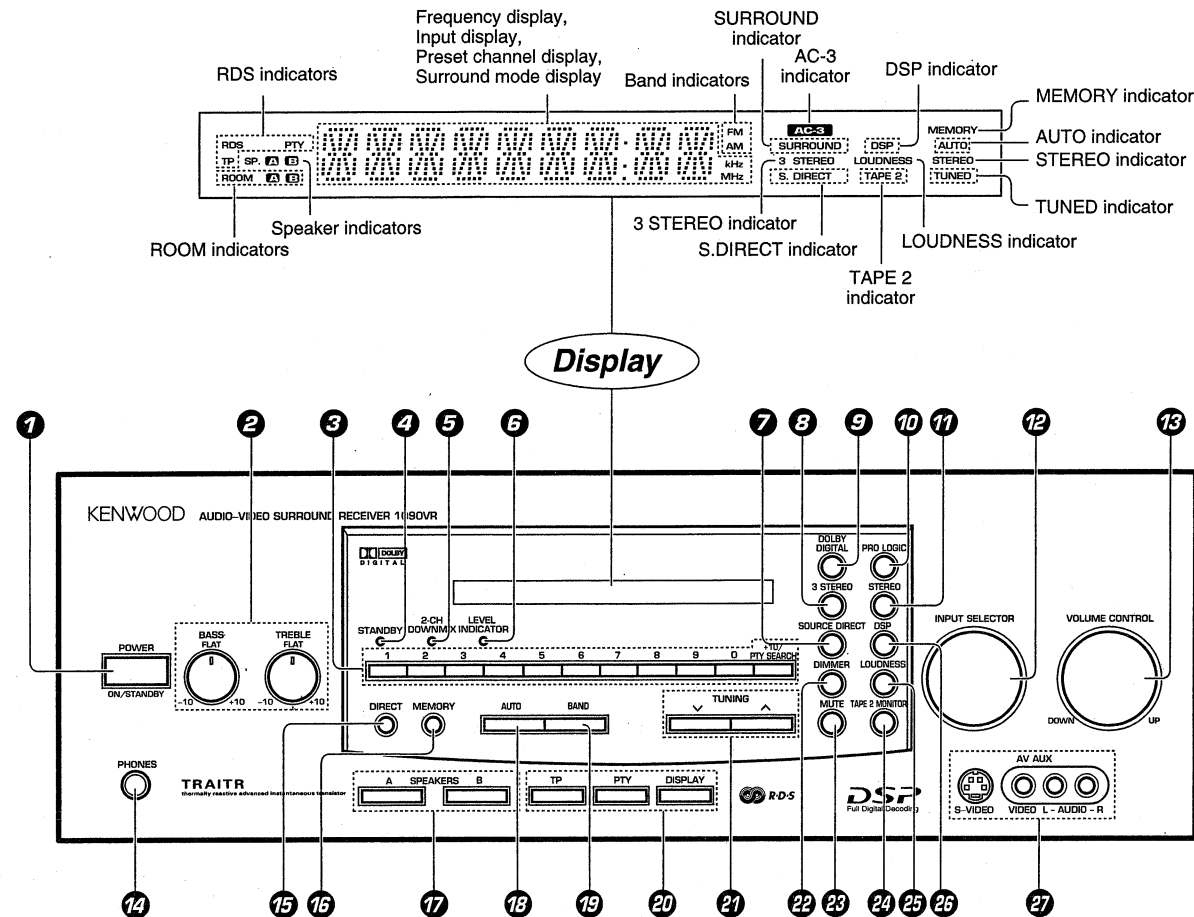
Make use of the changing final transistor etc.

1. Remove the 4 screws (1), then remove the fuse PCB.
2. Remove the 7 screws (2), then assemble the fuse PCB and the 4 screws (1).
3. Lay the 2 boxes (3), then upside down the KR-V999D.
4. Remove the 14 screws (4) and PCB support, then remove the bottom plate.



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CONTROLS



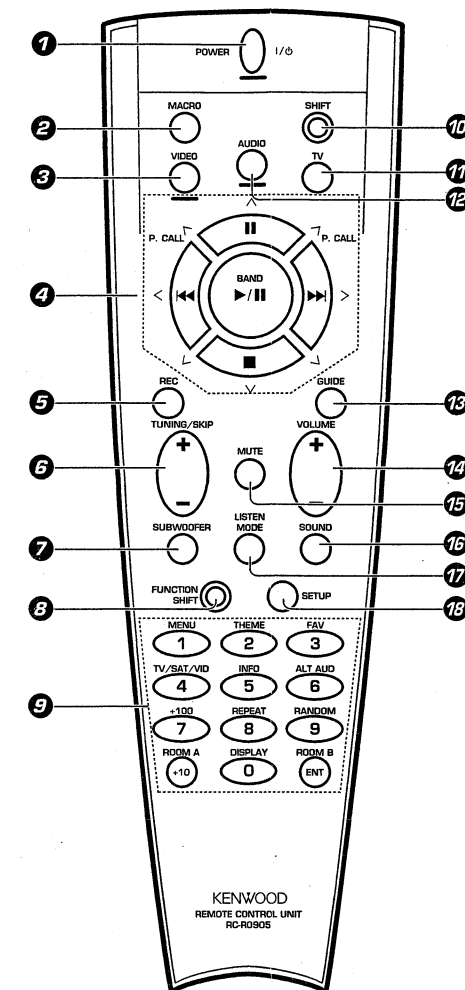
- 1 POWER key**
Use to switch the power ON/STANDBY.
- 2 Tone Control knobs**
- 3 Numeric keys**
- 4 STANDBY indicator**
- 5 2 CH DOWNMIX indicator**
Lights when an DOLBY DIGITAL (AC-3) format signal is being downmixed to 2 channel stereo.
- 6 LEVEL indicator**
Lights when the level of the signal being input is too high.
- 7 SOURCE DIRECT key**
- 8 DOLBY 3 STEREO key**
Use to turn on the DOLBY 3 STEREO mode.
- 9 DOLBY DIGITAL key**
Use to turn on the DOLBY DIGITAL (AC-3) mode.
- 10 PRO LOGIC key**
Use to turn on the DOLBY PRO LOGIC mode.
- 11 STEREO key**
Use to cancel the surround mode.
- 12 INPUT SELECTOR knob**
Use to select the input sources.
- 13 VOLUME CONTROL knob**
- 14 PHONES jack**
Use for headphone listening.
- 15 DIRECT key**
Use to tune radio stations directly by numerical input.
- 16 MEMORY key**
Use to store radio stations in the preset memory.
- 17 SPEAKERS A/B keys**
Use to turn the speakers ON/OFF.
- 18 AUTO key**
Use to select the auto tuning mode.
- 19 BAND key**
Use to select the broadcast band.
- 20 RDS keys**
- 21 TUNING keys**
Use to tune in radio broadcasts.
- 22 DIMMER key**
Use to adjust the brightness of the display.
- 23 MUTE key**
Use to mute the sound.
- 24 TAPE 2 MONITOR key**
Use to monitor a recording.
- 25 LOUDNESS key**
Use to activate the frequency weighting network.
- 26 DSP key**
Use to turn on, or switch, the DSP mode.
- 27 AV AUX jacks**

About the STANDBY indicator

This unit has a **STANDBY** indicator. When the **STANDBY** indicator is lit, the unit consumes a small amount of power to preserve the memory. This is called STANDBY mode. This mode also lets you turn the power ON using the remote control.

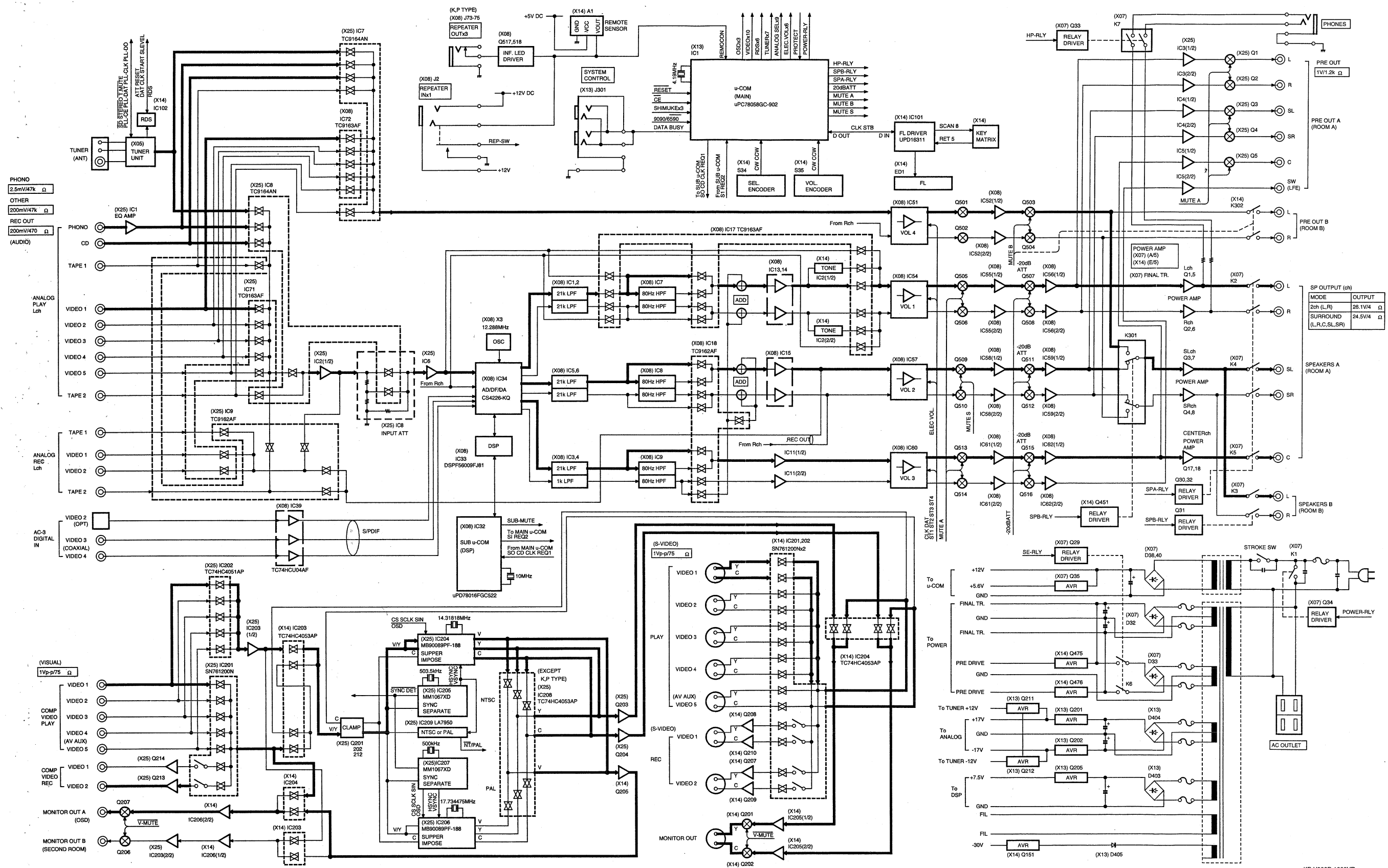
KR-V999D/1090VR

REMOTE CONTROL OPERATION

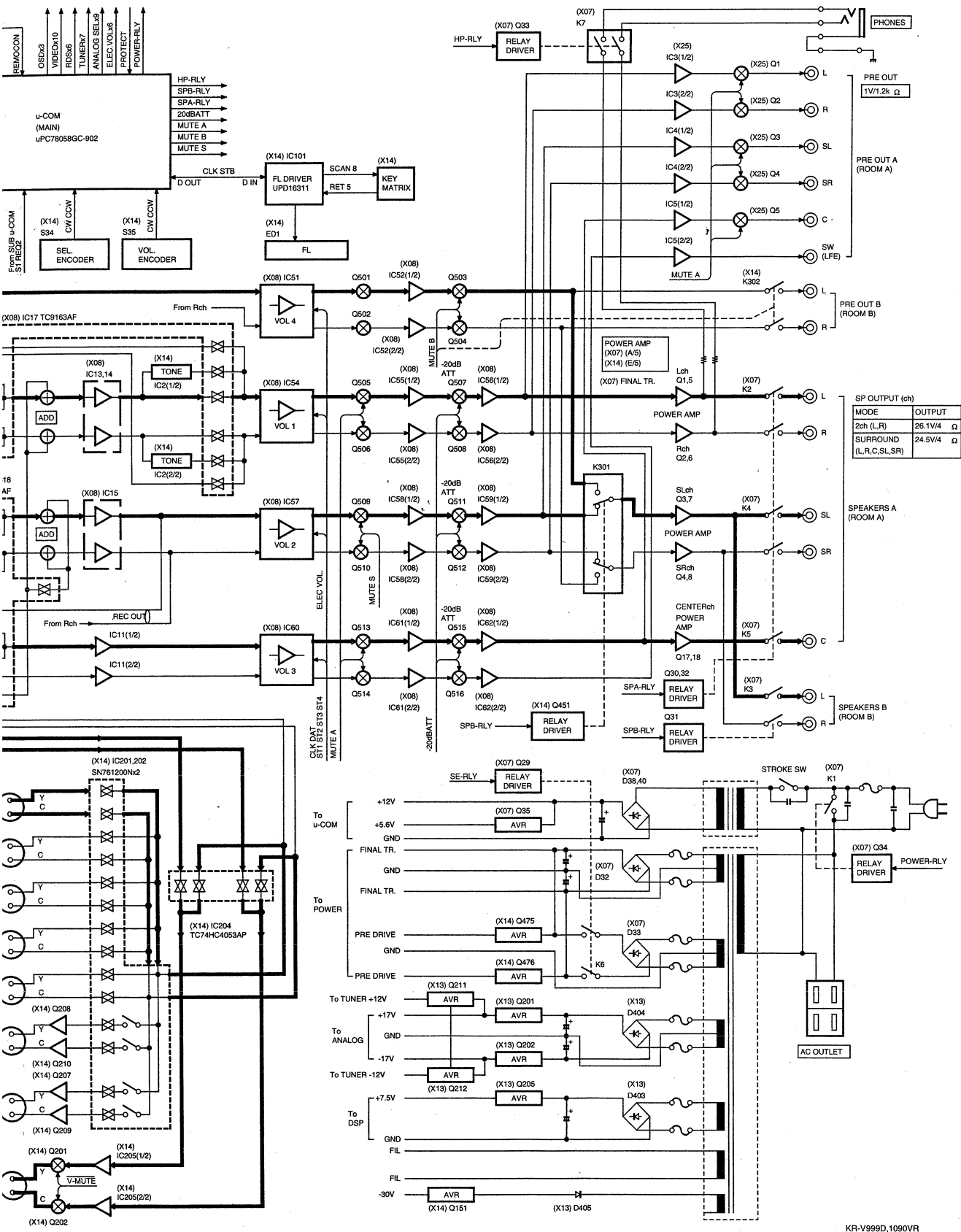


- 1 POWER key**
Use to turn the receiver on and off.
Use in combination with the input selector (AUDIO, VIDEO, or TV) keys and SHIFT key to turn various components on and off.
- 2 MACRO key**
Use in combination with the AUDIO, VIDEO, or TV keys to execute a series of commands automatically (MACRO PLAY).
- 3 VIDEO selector key**
Selects the video inputs (VIDEO 1, VIDEO 2, VIDEO 3, VIDEO 4, AV AUX) and sets the remote to operate the component registered at the respective input.
- 4 Multi control keys**
Use to operate the selected component and to operate the on-screen display.
- 5 REC key**
Use to operate the selected component.
- 6 TUNING/SKIP key**
Use during the setup procedure to specify various settings. Use to operate the tuner or selected component.
- 7 SUBWOOFER key**
Use in combination with the VOLUME +/- keys to adjust the volume of the subwoofer.
- 8 FUNCTION SHIFT key**
Use in combination with the numeric keys to execute alternate commands.
- 9 Numeric keys**
Provide functions identical to those of the original remote supplied with the component you are controlling.
To access the functions printed above the keys, Press within 3 seconds of pressing the FUNCTION SHIFT key. Function availability varies for each component.
- 10 SHIFT key**
Use in combination with the AUDIO and VIDEO keys to change the remote control mode without changing the input selector or in combination with the POWER key to turn on and off components programmed into the remote.
- 11 TV selector key**
Sets the remote to operate a TV or cable box (TV 1, TV 2, CABLE). This key does not change the input selector on the receiver.
- 12 AUDIO selector key**
Selects the audio inputs (CD, TAPE1/MD, TUNER, PHONO) and sets the remote to operate the respective KENWOOD audio component.
If you connect audio components from KENWOOD and other makers to the TAPE1/MD or CD jacks, you can set the remote to operate these components by registering the appropriate setup code at the respective input.
- 13 GUIDE key**
Use to activate the OSD menu functions of registered components.
- 14 VOLUME key**
Use to adjust the receiver volume.
- 15 MUTE key**
Use to temporarily mute the sound.
- 16 SOUND key**
Use to activate the Sound OSD and set the remote to OSD control mode.
- 17 LISTEN MODE key**
Use to select the desired surround mode.
- 18 SETUP key**
Use to activate the Setup OSD and set the remote to OSD control mode.

BLOCK DIAGRAM



1. A i
 2. Th
- Wf
 - Wf
 - Wf
 - If tl
 - If a
 - If 1
 - sta
 - Wf
 - ch



KR-V999D/1090VR

CIRCUIT DESCRIPTION

1. A initialization condition

- POWER ON/OFF : OFF
- MAIN VOLUME LEVEL : -66dB
- SOUND INPUT SELECTOR (KR-V999D : ROOM A,B) : TUNER
- PICTURE SIGNAL INPUT SELECTOR (KR-V999D : ROOM A,B) : VIDEO 1
- SPEAKER A : ON
- SPEAKER B : OFF
- TAPE 2 / MONITOR (KR-V999D ONLY) : OFF
- SOURCE DIRECT : OFF
- DIMMER : DIMMER 1
- LOUDNESS : OFF
- OSD DISPLAY MODE : ON
- FL DISPLAY MODE : SELECTOR
- SURROUND MODE : STEREO
- FRONT SPEAKER : LARGE
- CENTER SPEAKER : LARGE
- REAR SPEAKER : LARGE
- SUB WOOFER : OFF
- EACH CHANNEL LEVEL : 0dB
- TONE BASS (KR-V888 ONLY) : 0dB
- TONE TREBLE (KR-V888 ONLY) : 0dB
- TUNING MODE : AUTO
- PRESET MEMORY : TEST FREQUENCY (MAKER MEMORY)
- LAST BAND : FM
- FM LAST FREQUENCY : 87.5MHz (Except J)
- AM LAST FREQUENCY : 76.0MHz (J)
- LAST P.ch : 531kHz (CH.SP 9kHz)
- PTY SELECT MODE : 530kHz (CH.SP 10kHz)
- PTY SEARCH MODE : —ch
- TP SEARCH MODE : OFF
- RDS DISPLAY MODE : OFF
- TA / NEWS / INFO. : OFF
- OSD RT DISPLAY MODE : PS MODE
- ON : ON

2. The condition which each memory becomes the initial state.

- When fixation data is not a specified value, each memory becomes the initial state.
- When a test mode flag and all illumination flag are not set up at the time of a reset, each memory becomes the initial state.
- When KR-V999D is reset while pressing POWER switch, each memory becomes the initial state. (When AC plug is connected to an outlet)
- If the destination of a tuner is changing when KR-V999D is reset, each memory becomes the initial state. Or, if the condition of CH.SPACE switch is changing when KR-V999D is reset, each memory becomes the initial state.
- If all electron volume data are back-up previous condition, when KR-V999D is reset, each memory becomes the initial state.
- If the data of all electron volume is not agreeing completely when KR-V999D is reset, each memory becomes the initial state.
- When KR-V999D is reset the value of a memory is added. Or the value of a memory is added when back-up is done. And, a checksum is calculated. And, if the checksum that was calculated does not agree, each memory becomes the initial state.

KR-V999D/1090VR

CIRCUIT DESCRIPTION

3. TUNER PRESET MEMORY FREQUENCY(INITIALIZE)

Channel	BAND	K1 TYPE	BAND	K2 TYPE	BAND	E1/E3 TYPE	BAND	Q TYPE
01ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
02ch	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz	FM	98.00MHz
03ch	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz	FM	108.00MHz
04ch	AM	630kHz	AM	630kHz	AM	630kHz	AM	630kHz
05ch	AM	1000kHz	AM	1000kHz	AM	999kHz	AM	999kHz
06ch	AM	1440kHz	AM	1440kHz	AM	1440kHz	AM	1440kHz
07ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	74.00MHz
08ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	65.00MHz
09ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FML	69.00MHz
10ch	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz	FM	89.10MHz
11ch	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz	FM	90.00MHz
12ch	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz	FM	97.50MHz
13ch	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz	FM	98.50MHz
14ch	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz	FM	106.00MHz
15ch	AM	530kHz	AM	530kHz	AM	531kHz	AM	531kHz
16ch	AM	990kHz	AM	990kHz	AM	990kHz	AM	990kHz
17ch	AM	1700kHz	AM	1610kHz	AM	1602kHz	AM	1602kHz
18ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
19ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
20ch	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz
21~40ch	FM	76.00MHz	FM	87.50MHz	FM	87.50MHz	FM	87.50MHz

The initial setting is performed in a following event :

1. When backup memory data is destroyed when reset is applied to the microprocessor.
2. When the power cord is plugged in to the AC wall outlet while pressing the POWER key.

4. Condition by the destination or model

Type	BAND	Reception frequency	Channel space	IF	PLL standard frequency	Destination switch				
						4 65	3 62	26	25	24
K1(1700) (RBDS)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	0	0	1	0	0
	AM	530kHz - 1700kHz	10kHz	+450kHz	10kHz					
K2 (1610)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	0	1	0	1	0
	AM	530kHz - 1610kHz	10kHz	+450kHz	10kHz					
K3(1610) (RBDS)	FM	87.5MHz - 108.0MHz	100kHz	+10.7MHz	50kHz	1	0	0	1	0
	AM	530kHz - 1610kHz	10kHz	+450kHz	10kHz					
E1	FM	87.5MHz - 108.0MHz	50kHz	+10.7MHz	50kHz	0 or 1	0 or 1	0	1	0
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					
E2 (RDS)	FM	87.5MHz - 108.0MHz	50kHz	+10.7MHz	50kHz	0	0	1	1	0
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					
M	K2/E1 is switched with only the setting of TSW3.					0	X	0	1	0
	(TSW3=1: K2 type, 0: E1 type)									
Y	K3/E1 is switched with only the setting of TSW3.					1	X	0	1	0
	(TSW3=1: E1 type, 0: K3 type)									
Q (RDS)	FM L	65.0MHz - 74.0MHz	10kHz	+10.7MHz	5kHz	*	*	*	*	*
	FM H	87.5MHz - 108.0MHz	50kHz	+10.7MHz	5kHz					
	AM	531kHz - 1602kHz	9kHz	+450kHz	9kHz					

※ The number inside ○ is a terminal number of a main microprocessor.

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CIRCUIT DESCRIPTION

5. Test mode

(1) Test mode setting method

Turn on the power supply while pressing TUNING-DOWN key, to make a set in test mode condition.

When a set is set up in test mode condition a set becomes the following condition.

Automatic POWER ON

All indicator tubes and also LED are lighted. (This condition can be canceled by pressing the key of the set.)

A backup at the thing except ON/OFF of POWER is initialized.

(2) Test mode cancellation method

The power supply is turned off.

(3) A tuner function.

When a selector is set to the tuner, the following key is not usual function and operates by the special function.

The function to summon the channel of the presetting

① The following channel is summoned when not operating +10 keys.

1ch ~ 9ch (1 ~ 9key)

10ch (0key)

② When +10 keys are pressed once, the following channel is summoned.

11ch ~ 19ch (1 ~ 9key)

20ch (0key)

③ When +10 keys are pressed twice, the following channel is summoned.

21ch ~ 29ch (1 ~ 9key)

30ch (0key)

④ When +10 keys are pressed three times, the following channel is summoned.

31ch ~ 39ch (1 ~ 9key)

40ch (0key)

⑤ When +10 keys are pressed four times, it gets to do the function which is the same as the condition which doesn't press +10 keys.

- The S level hexadecimal DATA display and the ATT ON/OFF function

When a selector is set to the tuner, it repeats the following operation cyclically when operating the PTY key of the set.

a) When ATT is in the OFF condition, it displays as follows.

"ATT OFF display" + "Signal level display by the tuner (HEX DATA)"

b) When ATT is in the ON condition, it displays as follows.

"ATT ON display" + "Signal level display by the tuner (HEX DATA)"

c) At the time of the ATT OFF condition, the set becomes usual display.

☆ When the key of a set is pressed a signal level display of a tuner continues to display the value of when that ATT works.

- The display changes by pressing TA•INFO•NEWS key, RDS DISPLAY key and TP key irrespective of the condition of AUTO-MEMORY.

☆ When it is inputting RDS signal the work of TP key is not able to be confirmed.

(TP display has changed by RDS signal.)

- MUTE signal output

Because TUNER-MUTE always becomes OFF condition, it isn't possible to do control.

- RDS display mode.

RDS-PS display works by pressing PRO-LOGIC key irrespective of TUNED. Then, "SURROUND" of an indicator tube is lighted. (It is able to cancel it by pressing PRO-LOGIC key.)

- By pressing MEMORY key, it is possible to do the work of all the lighting-up / usual lighting-up cyclically.

(4) An amplifier function.

- The value in the first of the speaker setting by the test mode is full equipment.

- When a selector is set to the thing except TUNER, the following key works by the special function. When a selector is set to TUNER, the following key does usual work.

① It is possible to set as follows by operating with the rotary encoder and the stoat key when a selector is set to the thing except TUNER.

Setting item	Ten-key that operates	Master volume
Maximum	2	0dB
Middle	3	-30dB
Minimum	1	-98dB

② The following work is done by operating a ten-key, when a selector is set up other than TUNER.

Condition which displayed	Ten-key that operates	
The setting initial state is a master volume.		
INPUT LEVEL (IL)	4	After pressing the ten-key which was written on the left, press "1" "2" or "3" of the ten-key.
SPEAKER DELAY TIME (DL)	5	
SPEAKER LEVEL FRONT L (L)	6	
SPEAKER LEVEL FRONT R (R)	7	
SPEAKER LEVEL CENTER (C)	8	
SPEAKER LEVEL REAR L (SL)	9	
SPEAKER LEVEL FRONT R (SR)	0	
SPEAKER LEVEL WOOFER (SW)	+10	

③ Test tone operation

While displaying as follows every time it presses DIRECT key when dolby surround is working, it switches a speaker and TEST-TONE is output.

By pressing STEREO key, this work and dolby surround can be canceled.

Lch → Cch → Rch → RSch → LSch → SWch

KR-V999D/1090VR

CIRCUIT DESCRIPTION

④ Mute signal output

Because the analog mute always becomes OFF condition, it isn't possible to control absolutely. however, when the value with front volume is the minimum, it becomes an analog mute ON condition.

⑤ Sub microprocessor mute work

A sub microprocessor mute works, by pressing AUTO/MANUAL key. The work of a sub microprocessor mute is cancelled cyclically, by pressing AUTO/MANUAL key after that.

- The display to this work is not displayed to an indicator tube.

⑥ Midnight work function.

The following work is done cyclically, each time TUNING-UP key is pressed.

⑦ Dolby System surround center mode function

The following display is displayed cyclically each time TUNING-UP key is pressed.

⑧ The sub woofer speaker ON/OFF setting

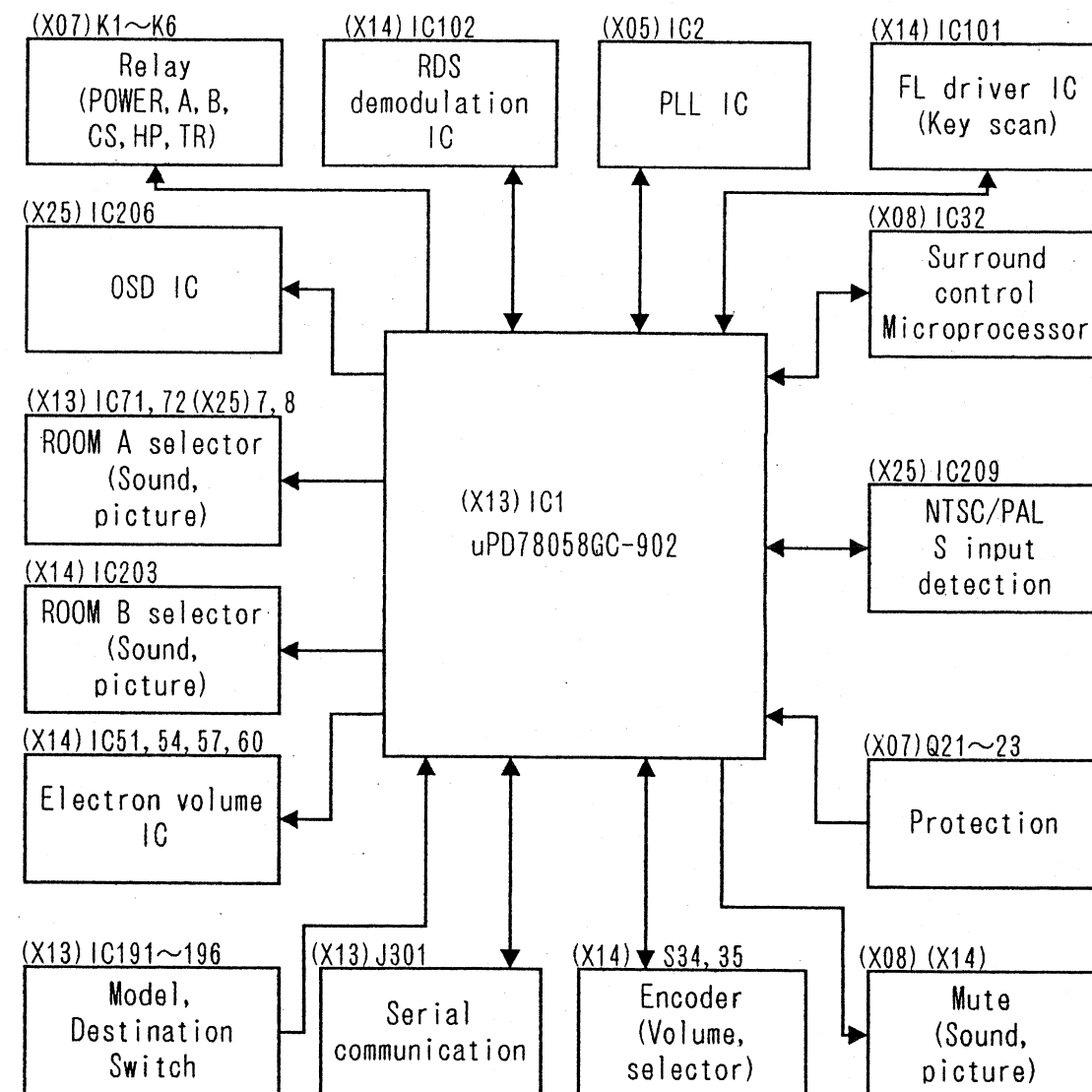
The setting of the existence or non-existence of a sub woofer speaker is able to set up cyclically each time MEMORY key is pressed.

⑨ TONE BASS/TREBLE. (KR-V888D/1080VR only)

The following display are done cyclically by pressing TONE BASS/TREBLE, when a test mode is working.

6. Microprocessor uPD78058GC-902 (X13-, IC1)

6-1 Microprocessor periphery block diagram



KR-V999D/1090VR

CIRCUIT DESCRIPTION

6-2. Terminal explanation

Pin No.	Name	I/O	Description
1	RELAY_TR	O	Relay Secondary side of the transformer
2	RELAY_HP	O	Relay HEAD PHONE
3	PROTECT	I	Protection input
4	AVSS	—	GND for A/D
5	SUB_RESET	O	Sub microprocessor RESET
6	OSD_CS1	O	MB90089 CS1 for NTSC
7	AVREF1	—	Unuse
8	8/16	I	Serial 8/16 bit judgement terminals
9	OSD_SIN	O	MB90089 SIN
10	OSD_SCLK	O	MB90089 SCLK
11	SUB_SI	I	Control microprocessor communication SI
12	SUB_SO	O	Control microprocessor communication SO
13	SUB_CLK	O	Control microprocessor CLK
14	SUB_REQ1	O	Control microprocessor REQ1
15	SUB_REQ2	I	Control microprocessor REQ2
16	FL_DOUT	I	UPD16311 DOUT (key scan)
17	FL_DIN	O	UPD16311 DIN (display data output)
18	FL_CLK	O	uPD16311 CLK
19	999D/888D	I	KR-V999D/888D switching switch
20,21	SEL_1,SEL_2	I	Selector encoder input 1 input 2
22,23	VOL_1,VOL_2	I	Volume encoder input 1 input 2
24 - 26	TSW_0 - TSW_2	I	Destination switching switch 0 - switch 2
27	FL_STB	O	uPD16311 STB
28	VSEL_DATA	O	NJU3713 (expansion IC for picture selector) DATA
29	VSEL_CLK	O	NJU3713 (expansion IC for picture selector) CLK
30	VSEL_STB	O	NJU3713 (expansion IC for picture selector) STB
31	—	—	Unuse
32	S_SW	I	S detection
33	VSS	—	
34	OSD_CS2	O	MB90089 CS2 for PAL
35	NTSC_PAL_OUT	O	NTSC/PAL switching output
36	NTSC_PAL_IN	I	NTSC/PAL switching input
37	LOUDNESS	O	LOUDNESS control
38,39	—	—	Unuse
40	SEL_STB1	O	NJU731x STB for ROOM A
41	SEL_STB2	O	NJU731x STB for ROOM B
42	VOL_CE	O	TC9412 CE
43	COM_DATA	O	TC916x,TC9412 DATA
44	COM_CLK	O	TC916x,TC9412 CLK
45	SBUSY	I/O	Serial BUSY
46	SDATA	I/O	Serial DATA
47	MUTE_A	O	ROOM A mute
48	MUTE_B	O	ROOM B mute
49	SYNC_DET	I	OSD picture synchronous signal detection
50	V_MUTE	O	VIDEO MUTE

KR-V999D/1090VR

CIRCUIT DESCRIPTION

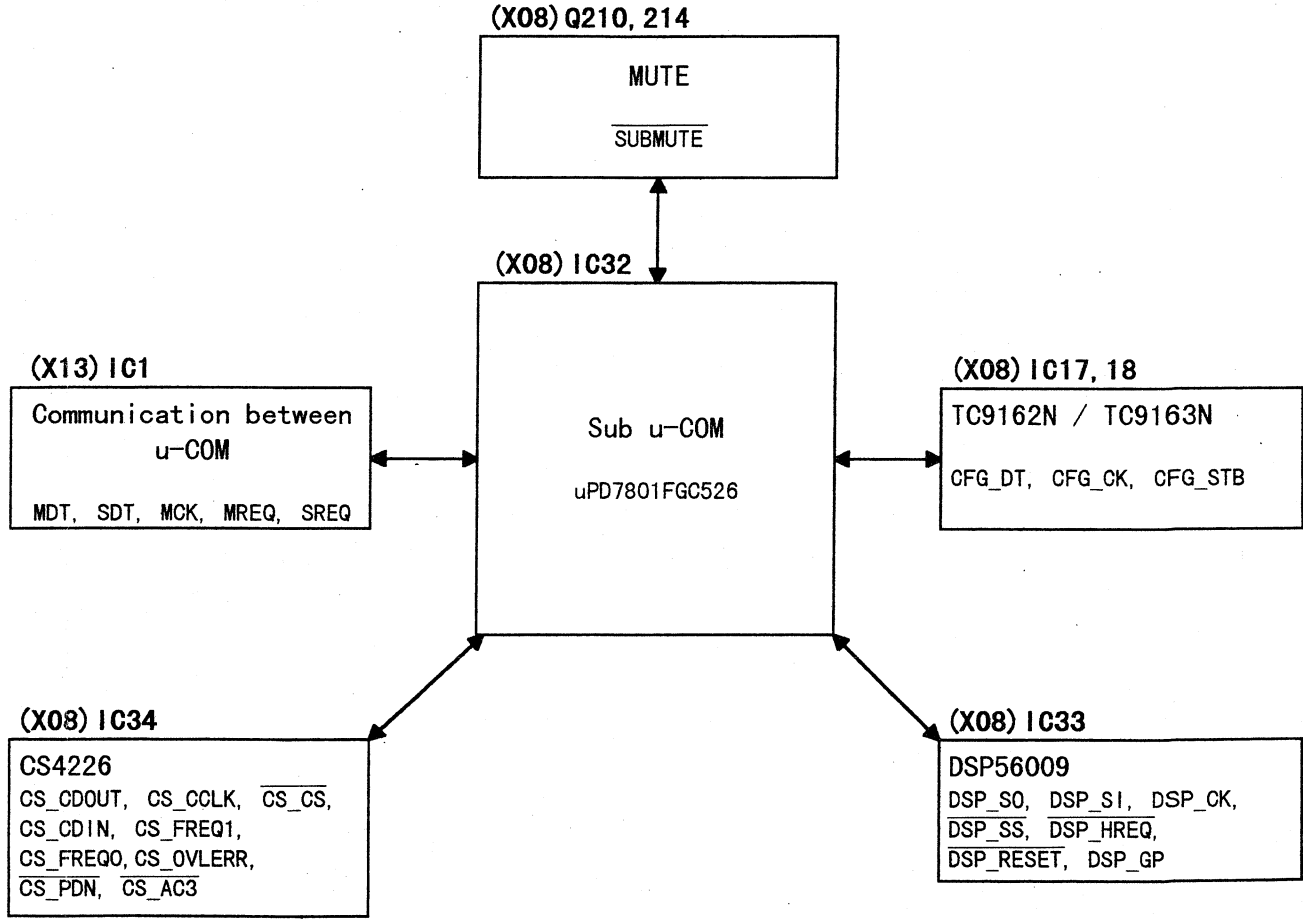
Pin No.	Name	I/O	Description
51	-20dB_MUTE	O	-20dB MUTE
52	EXT_OUT	O	EXTERNAL OUT
53	T_MUTE	O	Tuner mute
54	PLL_CLK	O	LC72131 CLK
55	PLL_DATA	O	LC72131 DATA
56	PLL_CE	O	LC72131 CE
57	SD	I	SD input
58	STEREO	I	STEREO input
59	PLL_DO	I	LC72131 DO
60	RESET	I	Reset
61	REMOCON	I	Remote controller input
62	TSW_3	I	Destination switching switch 3 (CH, SPACE)
63	RDS_DATA	I	RDS DATA
64	RDS_CLK	I	RDS CLK
65	TSW_4	I	Destination switching switch 4
66	—	—	Unuse
67	CE	I	Backup
68	VDD	—	Power supply+5V
69	X2	—	System clock connection
70	X1	I	System clock connection
71 - 73	—	—	Unuse
74	AVDD	—	Analogue power supply for A/D
75	AVREF0	—	Standard voltage input for A/D
76	RDS_SLEVEL	I	RDS S_LEVEL
77	RELAY_POWER	O	Relay POWER
78	RELAY_A	O	Relay ROOM A
79	RELAY_B	O	Relay ROOM B
80	RELAY_CS	O	Relay CENTER SURROUND

KR-V999D/1090VR

CIRCUIT DESCRIPTION

7. Sub-microprocessor uPD7801FGC526 (X08:- IC32)

7-1 Microprocessor periphery block diagram



7-2 Terminal explanation (submicroprocessor)

PIN NO.	NAME	I/O	DESCRIPTION
1	DSP_SS	O	DSP56009 SS
2	DSP_HREQ	I	DSP56009 HREQ
3	DSP_RESET	O	DSP56009 RESET
4,5	NC	I	UNUSE
6	CFG_DT	O	TC9162N/TC9163N DATA
7	CFG_CK	O	TC9162N/TC9163N CLOCK
8	CFG_STB	O	TC9162N/TC9163N STROBE
9	VSS		GND
10-12	NC	O	UNUSE
13	AD_SEL	O	ST.PCM/AC3 2ch DOWN MIX :L ELSE : H
14-17	NC	O	UNUSE
18	CS_CDOUT	I	CS4226 DATA IN
19	CS_CCLK	O	CS4226 CLOCK
20	CS_CS	O	CS4226 CHIP SELECT

KR-V999D/1090VR

CIRCUIT DESCRIPTION

PIN NO.	NAME	I/O	DESCRIPTION
21	CS_CDIN	O	CS4226 DATA OUT
22	CS_FREQ1	I	CS4226 FS CHECK
23	CS_FREQ0	I	CS4226 FS CHECK
24	VSS		GND
25	CS_PDN	O	CS4226 POWER DOWN PORT
26	CS_AUDIO	I	CS4226 AUDIO
27-30	NC	I	UNUSE
31	CS_OVL/ERR	I	CS4226 OVER LOAD//ERROR DETECT
32	SUBMUTE	O	ANALOG MUTE CONTROL
33,34	NC	I	UNUSE
35	RESET	I	u-COM RESET
36	CS_AC3	I	CS4226 AC3
37-39	NC	I	UNUSE
40	VDD		+5V
41	X2	O	CERAMICS
42	X1	I	CERAMICS
43	IC(VPP)		GND
44	XT2		OPEN
45	NC	I	+5V
46	AVSS		GND
47,48	NC	I	UNUSE
49	TEST_T	O	TEST TONE OFF/ON ON : LOW / OFF : HIGH
50-53	NC	I	UNUSE
54	DSP_GP	O	DSP56009 GP10PIN
55	AVDD		+5V
56	AVREF	I	GND
57	MDT	I	Communication between u-COM MASTER DATA
58	SDT	O	Communication between u-COM SLAVE DATA
59	MCK	I	Communication between u-COM MASTER CLOCK
60	MREQ	I	Communication between u-COM MASTER REQUEST
61	SREQ	O	Communication between u-COM SLAVE REQUEST
62	DSP_SQ	I	DSP56009 DATA IN
63	DSP_SI	O	DSP56009 DATA OUT
64	DSP_CK	O	DSP56009 CLOCK

Key matrix table

	⑬ KS0	⑫ KS1	⑪ KS2	⑩ KS3
⑮ KS1	——	DOLBY PROLOGIC	DOLBY 3 STEREO	DOLBY AC-3
⑯ KS2	STEREO	DSP	SOURCE DIRECT	——
⑰ KS3	LOUDNESS	MUTE	DIMMER	TAPE2
⑱ KS4	TUNING DOWN	0	9	+10
⑲ KS5	8	TUNING UP	6	7
⑳ KS6	BAND	AUTO / MANUAL	4	5
㉑ KS7	——	PTY	RDS DISPLAY	TA / NEWS / INFO.
㉒ KS8	SPEAKER A	MEMORY	2	3
㉓ KS9	POWER	SPEAKER B	1	DIRECT

※ The number inside ○ is a terminal number of IC101(X14).

KR-V999D/1090VR

CIRCUIT DESCRIPTION

8. Control list for the switch and the port

(1) Sound system selector ROOM A (0 : SW OFF / 1 : SW ON)

		X25(IC9)		(X08)IC71						(X08)IC72						(X25)IC8							
		②	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲	⑲
TAPE 2 OFF	TUNER	1	0	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	1	0		
	PHONO	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	1	0		
	CD	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	1	0		
	TAPE1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0		
	VIDEO1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0		
	VIDEO2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0		
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	1	0		
	VIDEO4	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	1	0		
	AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	1	0		
TAPE 2 ON	TUNER	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	0	1		
	PHONO	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	1		
	CD	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	1		
	TAPE1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1		
	VIDEO1	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1		
	VIDEO2	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1		
	VIDEO3	1	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	0	1		
	VIDEO4	1	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	0	1		
	AV AUX	1	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	0	1		

(2) Sound system selector ROOM B (0 : SW OFF / 1 : SW ON)

	(X08)IC71						(X08)IC72						(X25)IC27					
	②	③	⑥	⑦	⑩	⑪	②	③	④	⑥	⑦	⑧	② 27	③ 26	④ 25	⑥ 23	⑧ 21	
TUNER	0	0	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	
PHONO	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	0	0	
CD	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	
TAPE1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	
VIDEO1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	
VIDEO2	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	
VIDEO3	0	0	0	0	1	1	1	0	0	1	0	0	0	0	0	0	0	
VIDEO4	0	0	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	
AV AUX	0	0	0	0	1	1	0	0	1	0	0	1	0	0	0	0	0	

(3) Picture system selector ROOM A (0 : L / 1 : H)

		(X13)IC7				
		⑭	⑮	⑮	⑰	①
VIDEO1		0	0	0	0	0
VIDEO2		1	0	1	0	0
VIDEO3		1	1	1	1	1
VIDEO4		1	1	1	1	0
AV AUX		0	1	0	1	0

KR-V999D/1090VR
CIRCUIT DESCRIPTION

(4) Picture system selector ROOM B (0 : L / 1 : H)

VIDEO OUT	(X13)IC7		
	②	③	④
VIDEO1	0	0	0
VIDEO2	1	0	0
VIDEO3	0	1	0
VIDEO4	0	0	1
AV AUX	1	1	0

(5) Relay switching (0 : RELAY OFF / 1 : RELAY ON)

SPEAKER A	SPEAKER B	SURROUND	(X07)RELAY				
			A(K2)	B(K3)	CS(K4) (K5)	TR(K6)	HP(K7)
OFF	OFF	OFF	0	0	0	1	1
ON	OFF	OFF	1	0	0	1	0
ON	OFF	ON	1	0	1	1	0
OFF	ON	OFF	0	1	0	1	0
ON	ON	OFF	1	1	0	0	0

(6) OSD switching (0 : L / 1 : H)

S_SW	OSD A/B	(X13)IC7		
		⑥	⑦	⑧
L	A	0	0	1
L	B	0	1	0
H	A	1	1	1
H	B	0	1	0

(7) Input level switching (0 : SW OFF / 1 : SW ON)

	(X25)IC8			
	⑩	⑪	⑫	⑬
INPUT LEVEL ATT 0dB	1	0		
INPUT LEVEL ATT -3dB	0	0		
INPUT LEVEL ATT -6dB	0	1		

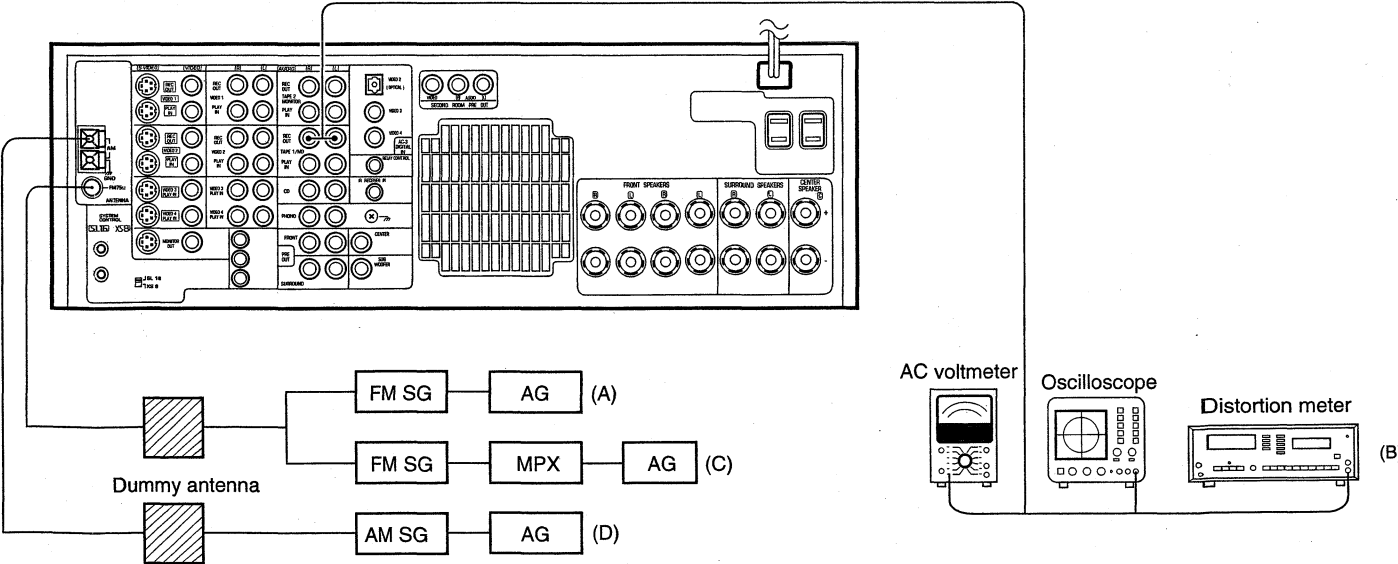
(8) Digital REC switching (0 : SW OFF / 1 : SW ON)

	(X25)IC9				
	③ ②⑥	⑤ ②④	⑥ ②③	⑧ ②①	⑨ ②⑦
DIGITAL REC	0	1	1	0	0
Except for DIGITAL REC	1	0	0	1	1

KR-V999D/1090VR
ADJUSTMENT

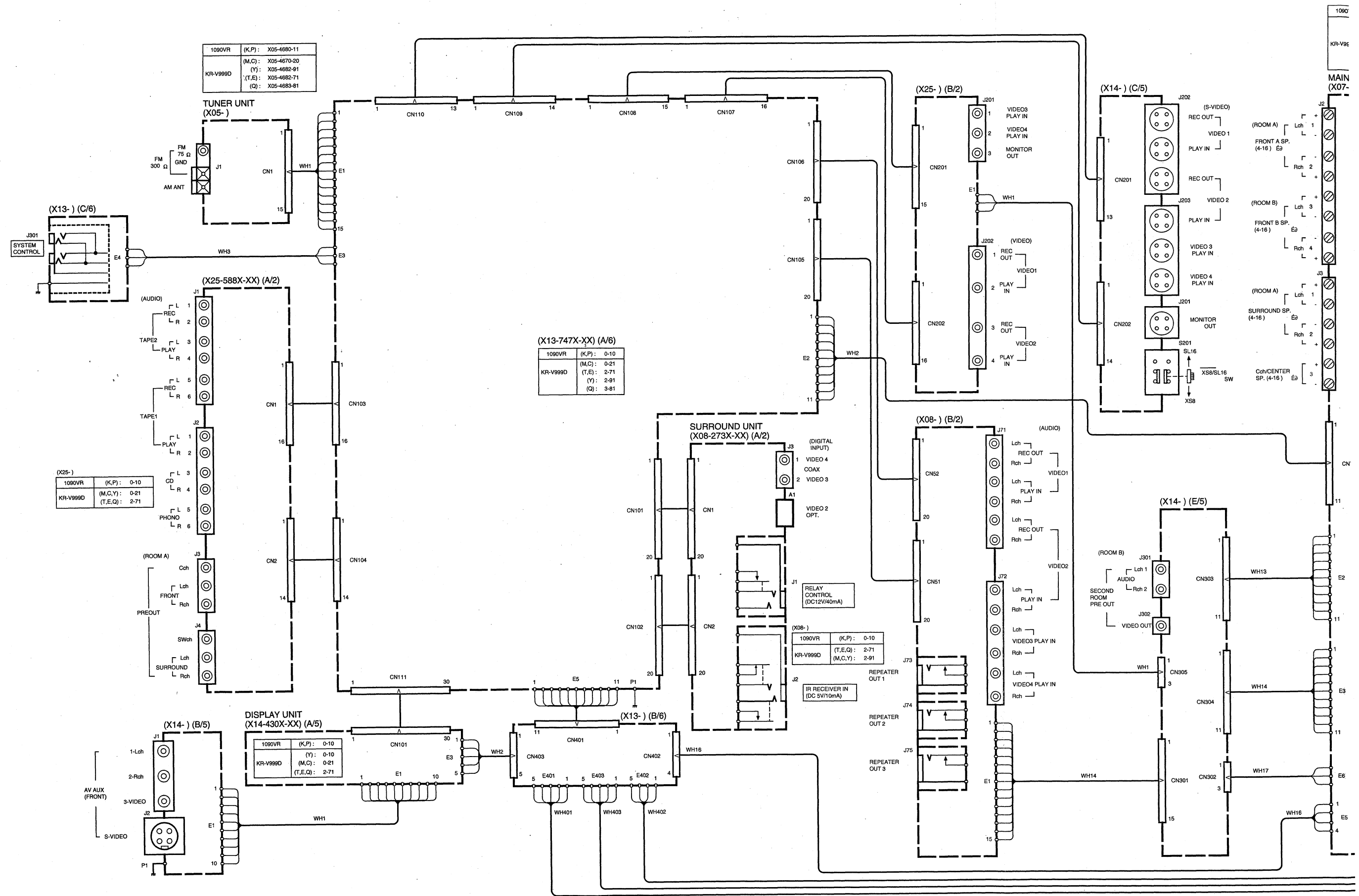
No.	ITEM	INPUT SETTINGS	OUTPUT SETTINGS	TUNER SETTINGS	ALIGNMENT POINTS	ALIGN FOR	FIG.
FM SECTION (E,T type) SELECTOR : FM							
1	DISCRIMINATOR L31 ↔ L32 (E,T,Q only)	(A) 98.0MHz 1kHz, ±40kHz dev. 60dBμ(ANT input)	Connect a DC voltmeter between TP3 of CN2 (X05-)	AUTO 98.0MHz	L31 (X05-) L32 (X05-)	0V Minimum distortion	(a)
2	DISTORTION (STEREO)	(C) 98.0MHz 1kHz, ±40kHz dev. Pilot: ±6kHz dev. 60dBμ(ANT input)	(B)	AUTO 98.0MHz	IFT (W02-)	Minimum distortion	(a)
AUDIO SECTION SPEAKER : A PREOUT : OFF PROLOGIC : ON							
<1>	IDLE CURRENT	—	Connect a DC voltmeter across CP1 or CN15(L) CN16(R) CN9(CENTER) CN20(SR) or CN17(SL) (X07-)	Volume:0	VR1(L) VR2(R) VR3(SL) VR4(SR) VR5(CENTER) (X07-)	13mV	
<2>	ON SCREEN Color burst frequency	After take a single PCB, conner supply between TP(+5V) and GND (x25-)(B/2)	Connect a frequency counter between port 10 (check round of HSYNC) of IC204(or 206) and GND (X25-)(B/2)	After power ON (stand-by), input Low CS(24pin) of IC204(or 206) four time(cancel inner reset), then input Low TEST(24pin)	TC201(NTSC) TC1(X14-) TC202(PAL) (X25-)	(TC201) 3.57954MHz (TC202) 4.433619MHz	

(a)



KR-V999D/1090VR

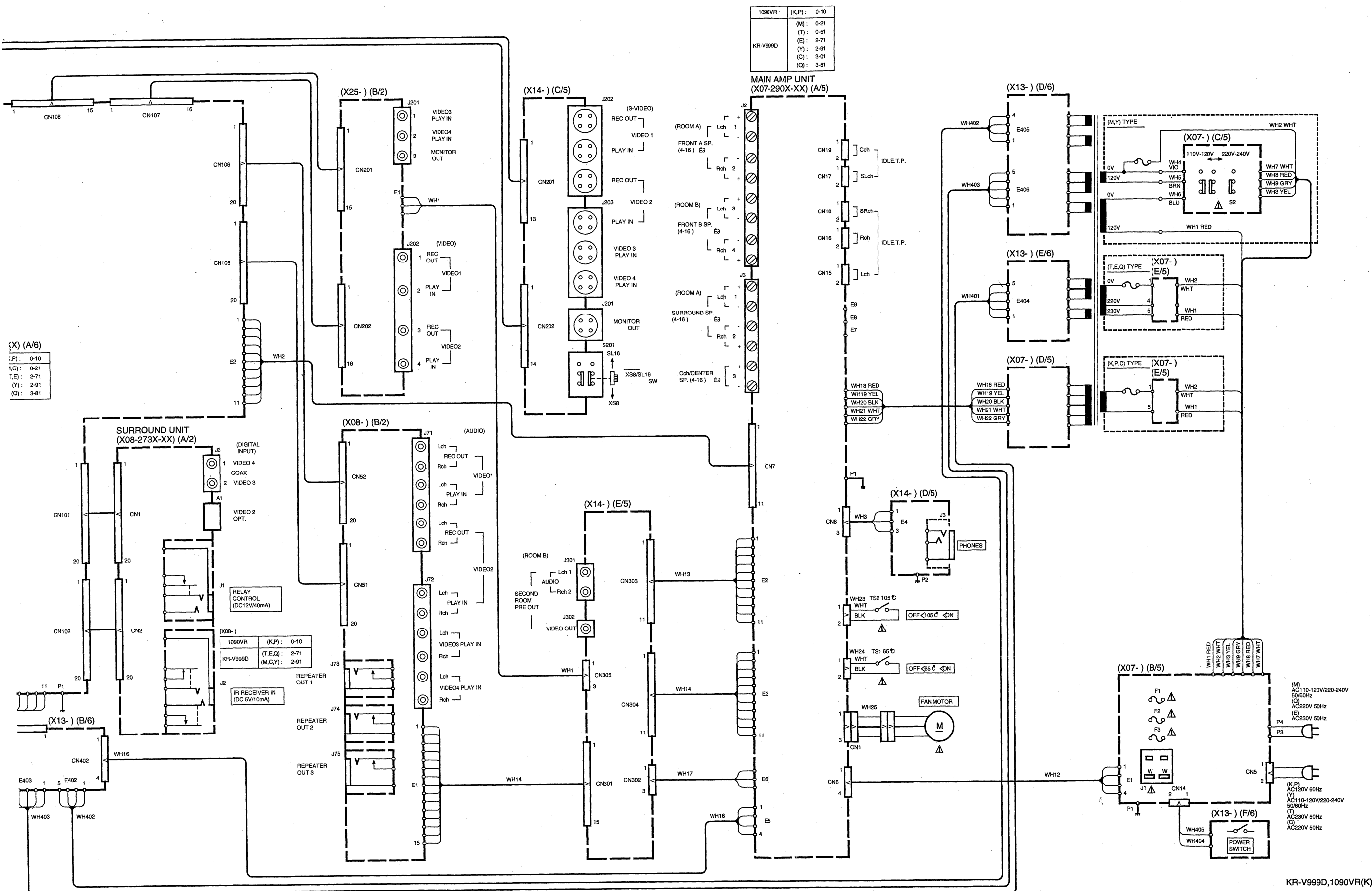
WIRING DIAGRAM



KR-V999D/1090VR

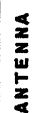
WIRING DIAGRAM

KR-V999D/1090VR



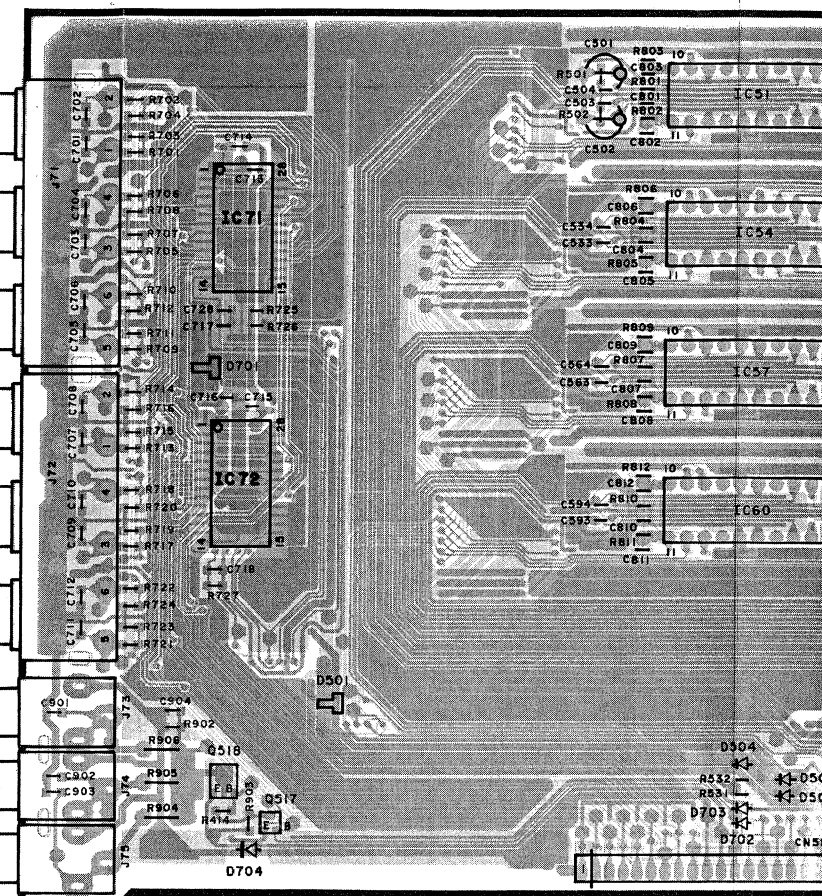
KR-V999D,1090VR(K)

(X05-4670-20) J70-0959-11

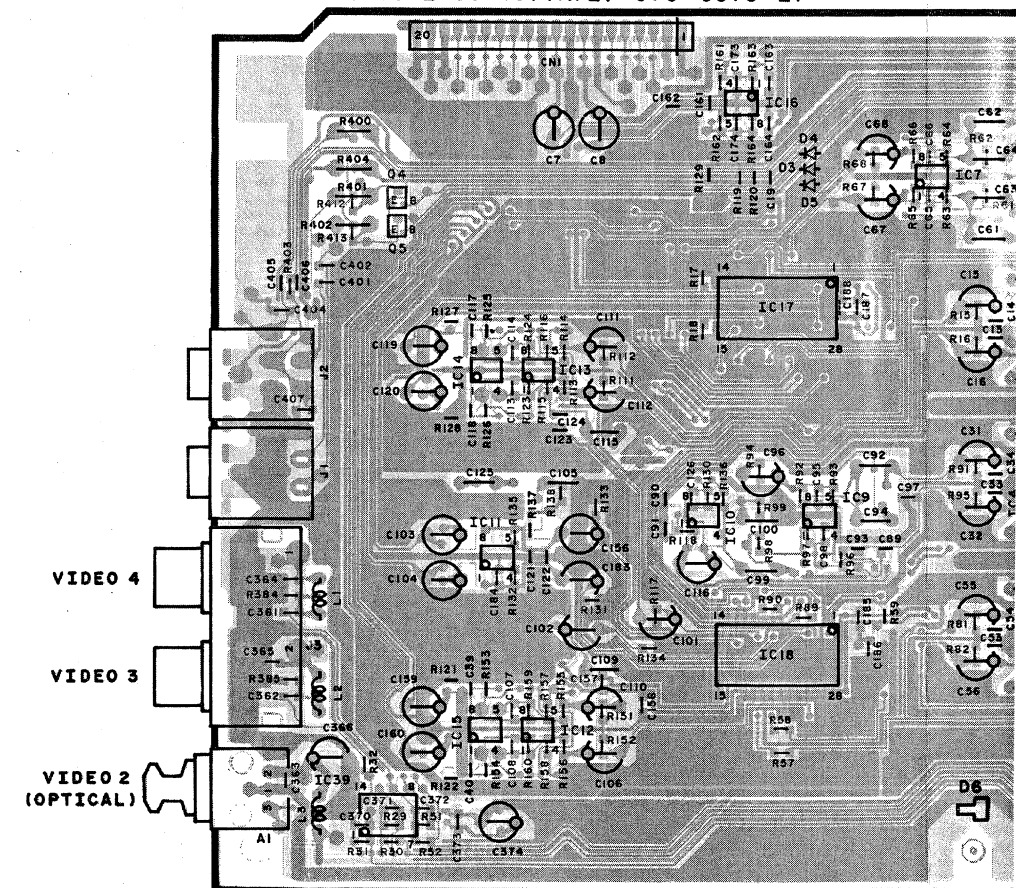


0-10: KP(1090VR)
2-71: EQT(KR-V999D)
2-91: Y(1090VR)
CM(KR-V999D)

REC OUT
VIDEO 1
PLAY IN
REC OUT
VIDEO 2
PLAY IN
VIDEO 3
PLAY IN
VIDEO 4
PLAY IN
PRE OUT
PRE OUT
PRE OUT



(X08-2730-10)(A/2) J70-0975-21



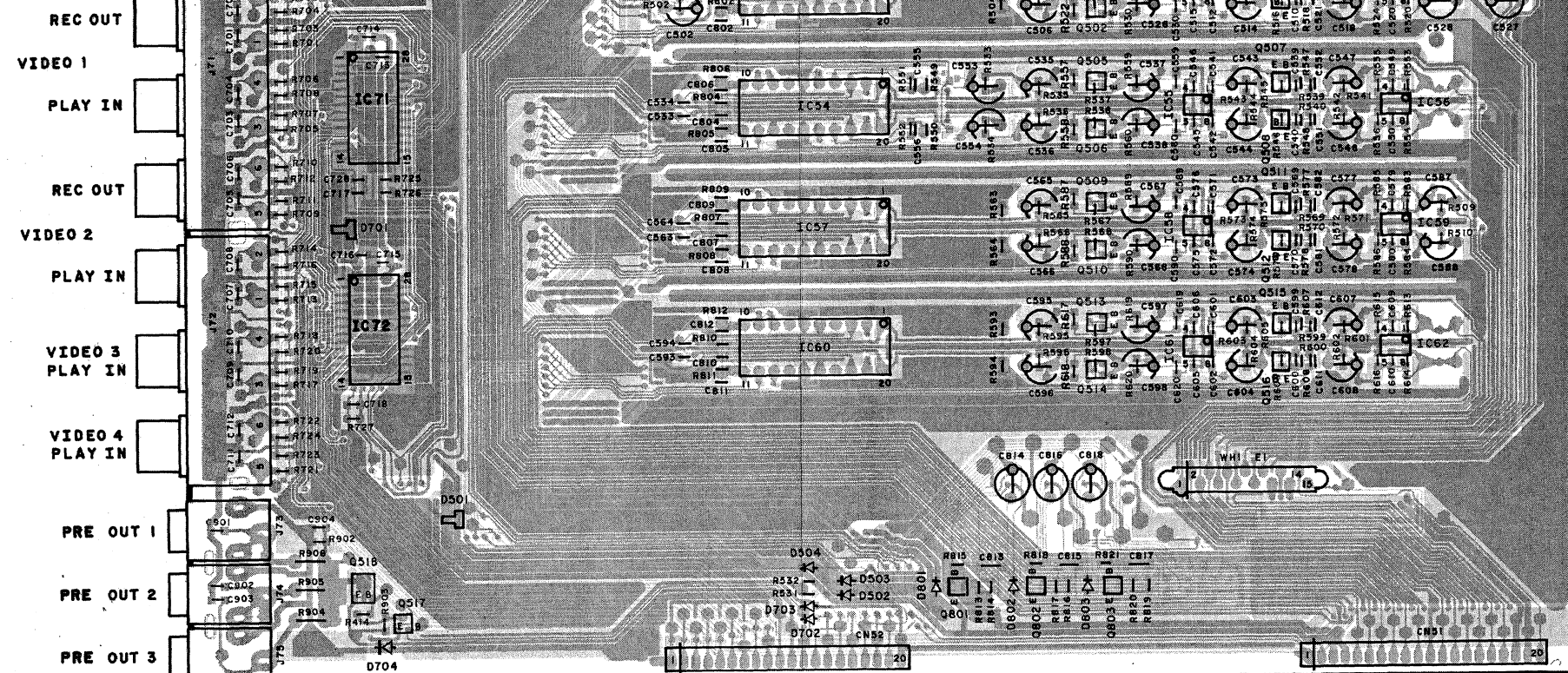
SURROUND UNIT(X08-273X-XX)

0-10: KP(1090VR)

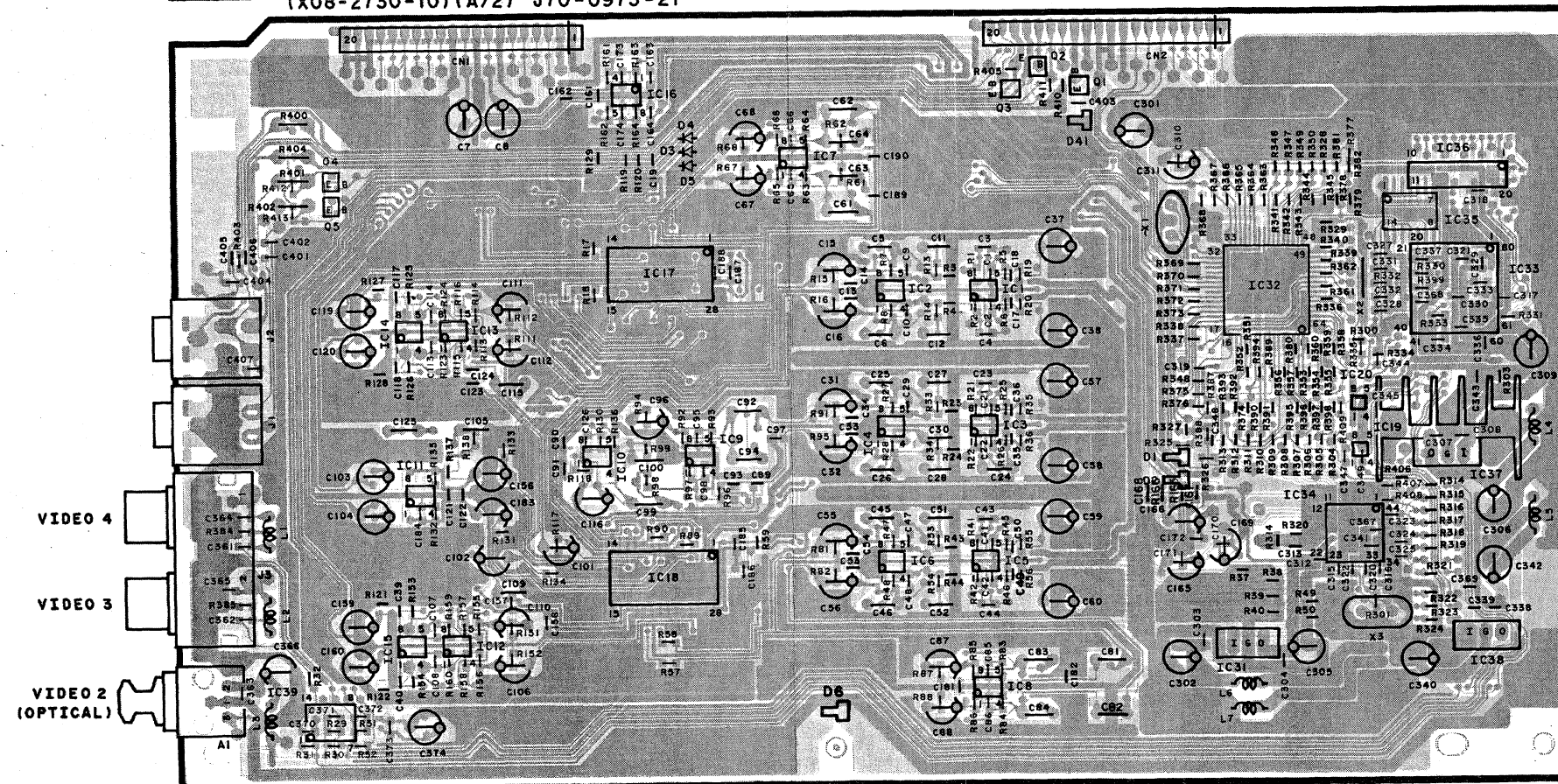
2-71: EQT(KR-V999D)

2-91: Y(1090VR)

CM(KR-V999D)



(X08-2730-10) (A/2) J70-0975-21

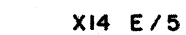


7

0-10: KP(1090VR)
0-21: M(KR-V999D)
0-51: T(KR-V999D)
2-71: E(KR-V999D)
2-91: Y(1090VR)
3-01: C(KR-V999D)
3-81: Q(KR-V999D)



2-71: EQT(KR-V999D)



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PC BOARD(Component side view)

SUB CIRCUIT UNIT

(X13-747X-XX)

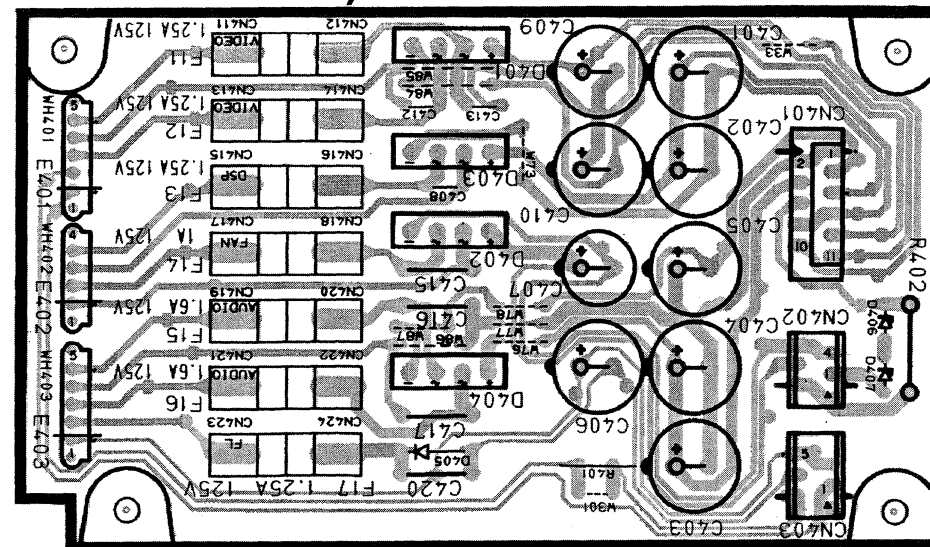
0-10: KP(1090)

0-21: C(KR-V999D)

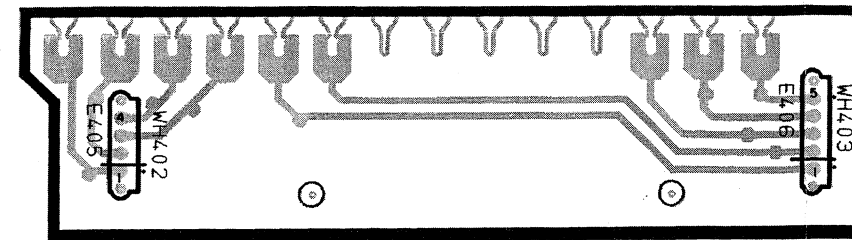
2-71: ET(KR-V999D)

2-91: Y(1090VR)

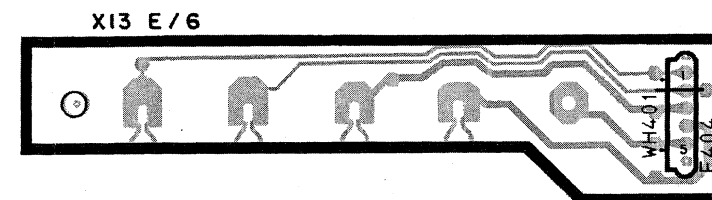
3-81: Q(KR-V999D)



X13 B / 6

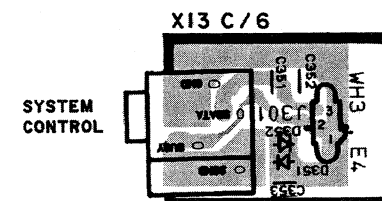
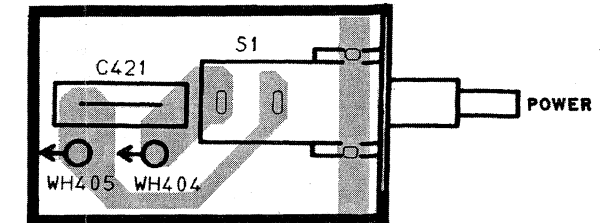


X13 D / 6



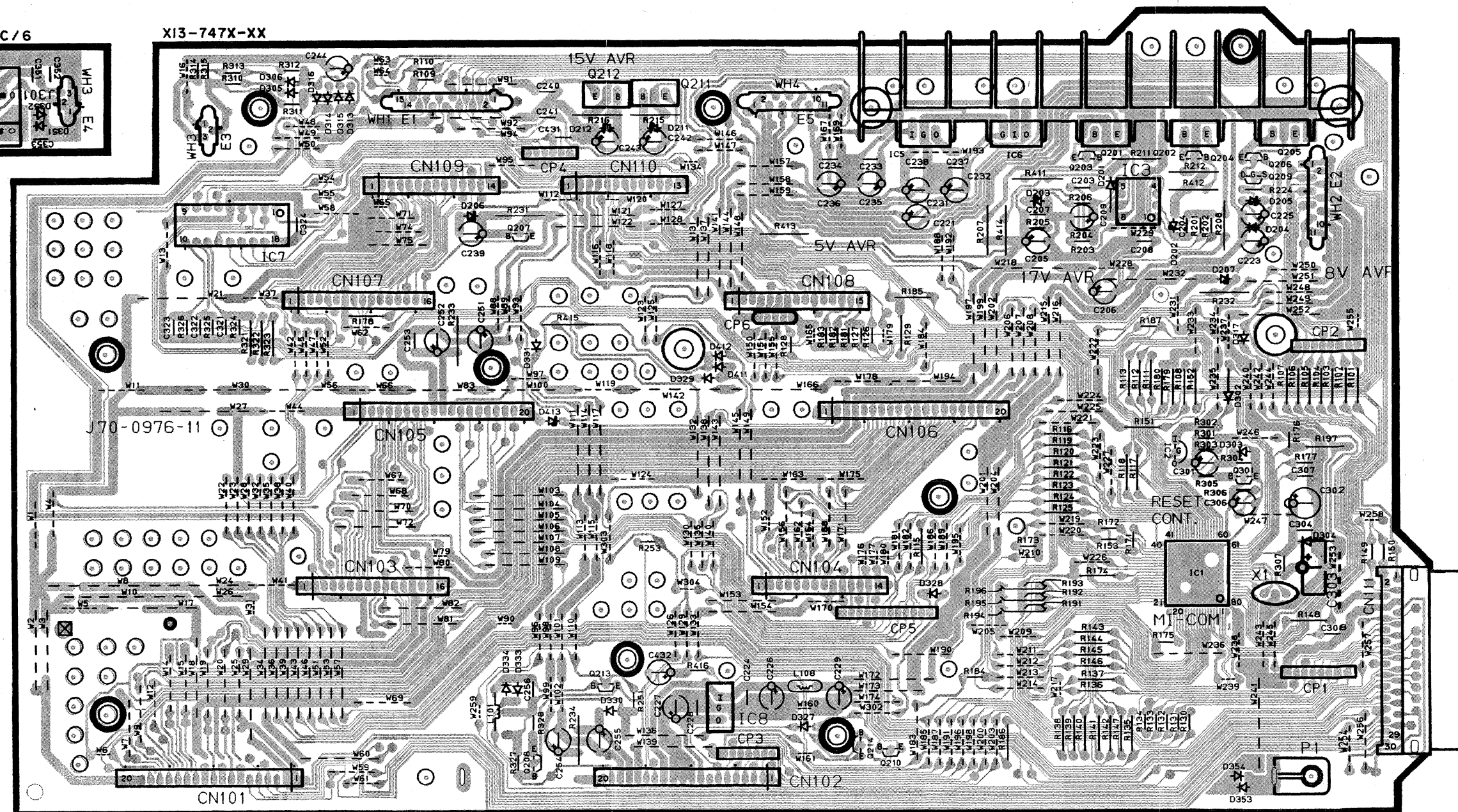
X13 E / 6

X13 F / 6



X13 C / 6

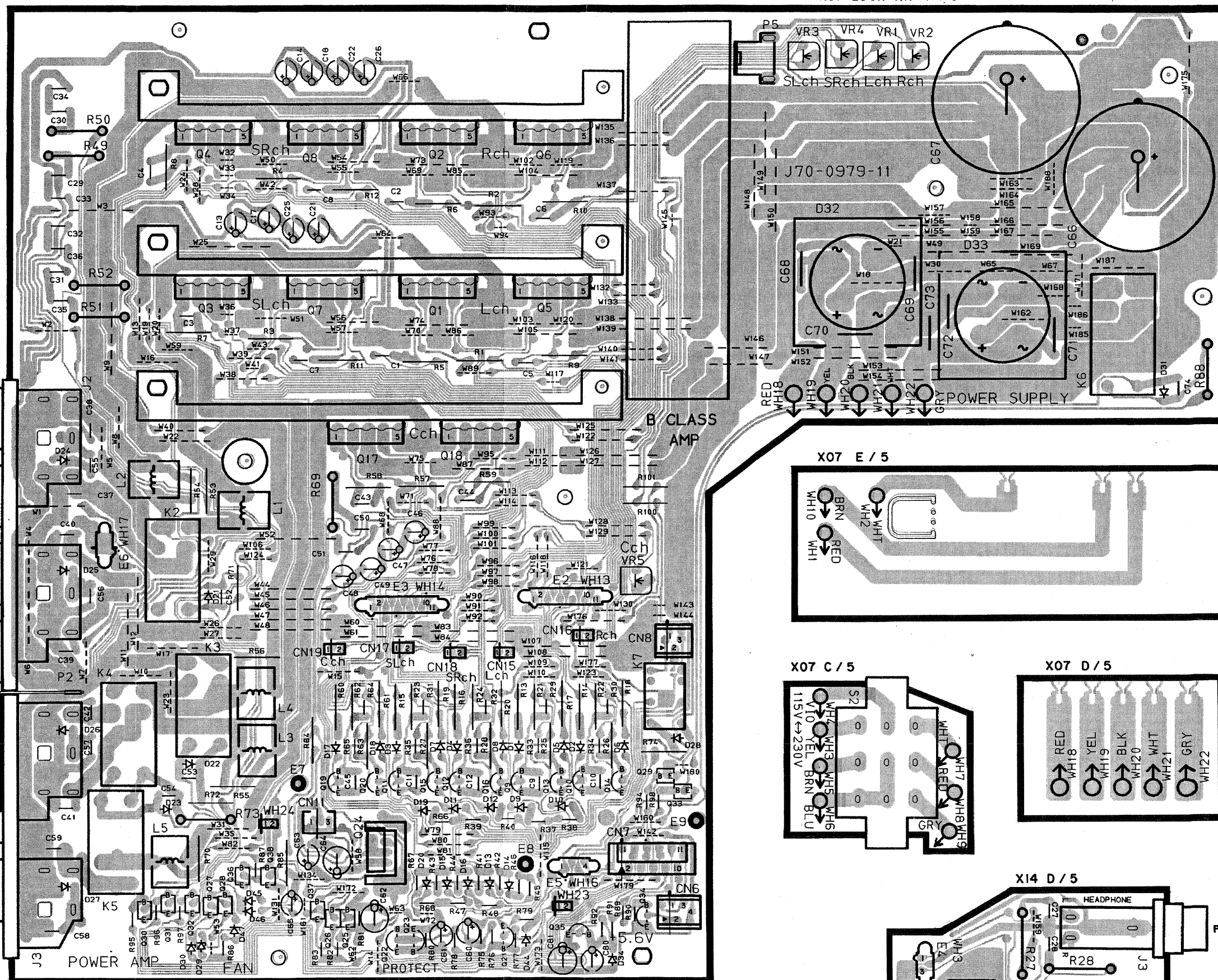
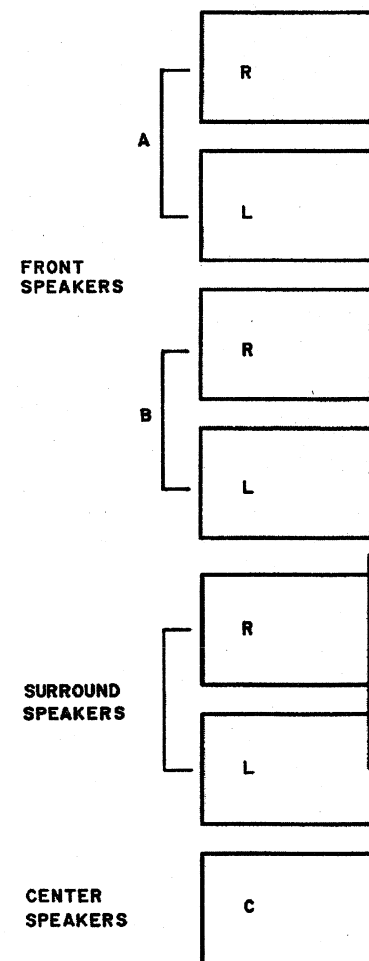
X13-747X-XX



PC BOARD(Component side view)

POWER AMPLIFIER UNIT (X07-290X-XX)

- 0-10: KP(1090VR)
- 0-21: M(KR-V999D)
- 0-51: T(KR-V999D)
- 2-71: E(KR-V999D)
- 2-91: Y(1090VR)
- 3-01: C(KR-V999D)
- 3-81: Q(KR-V999D)



X07-290X-XX A / 5

X07 E / 5

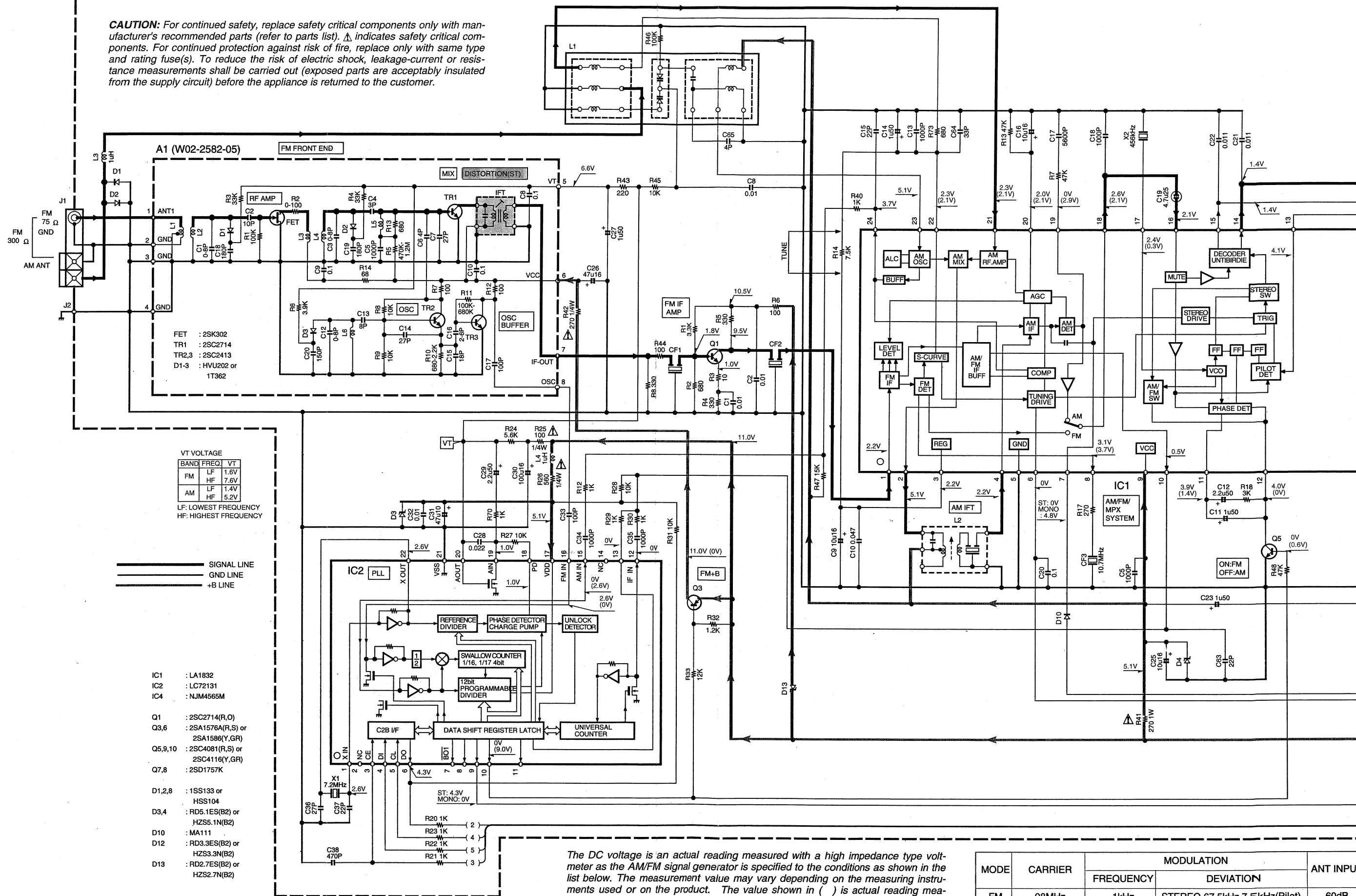
X07 C / 5

X07 D / 5

X14 D / 5

Refer to the schematic diagram for the value of resistors and capacitors.

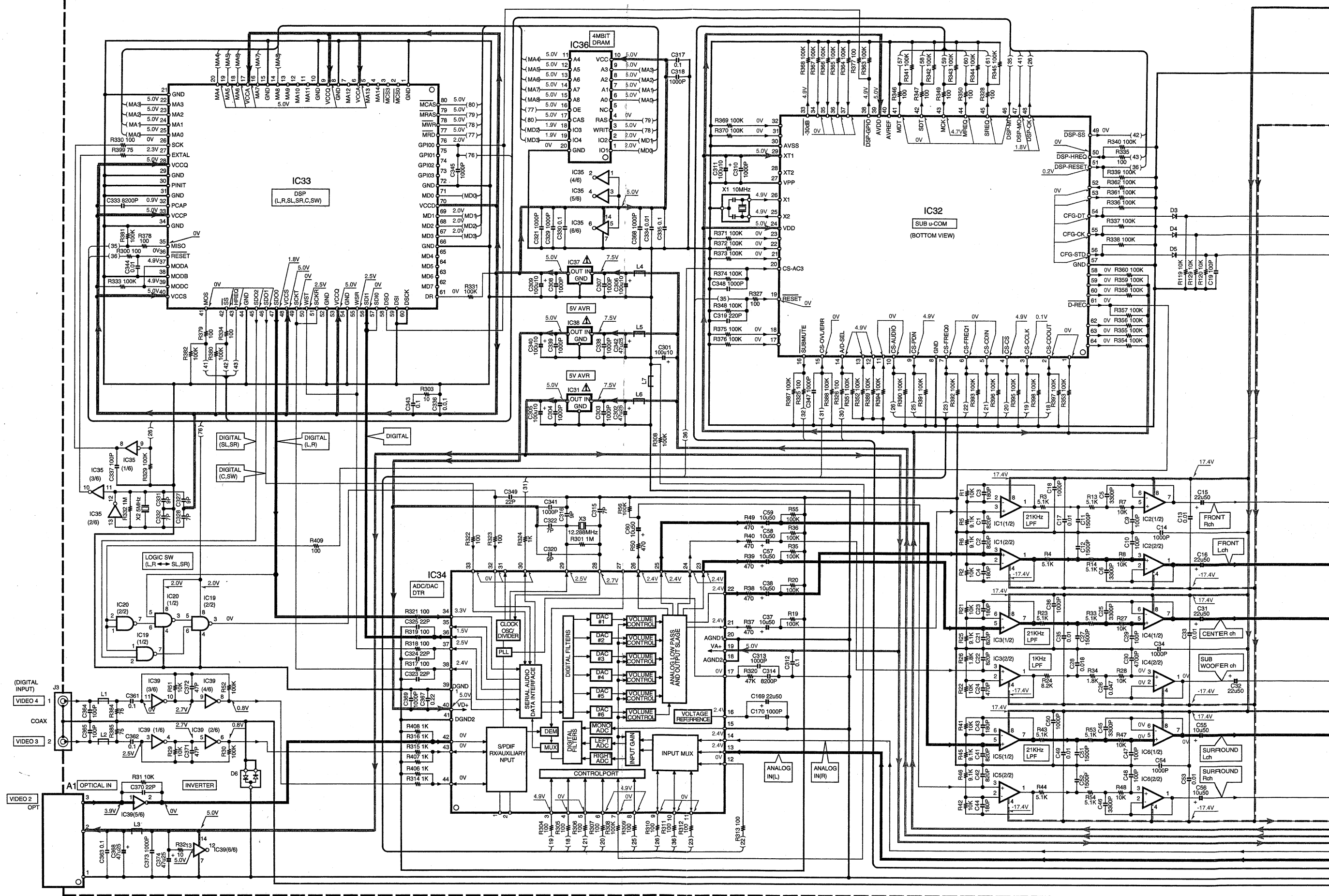
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

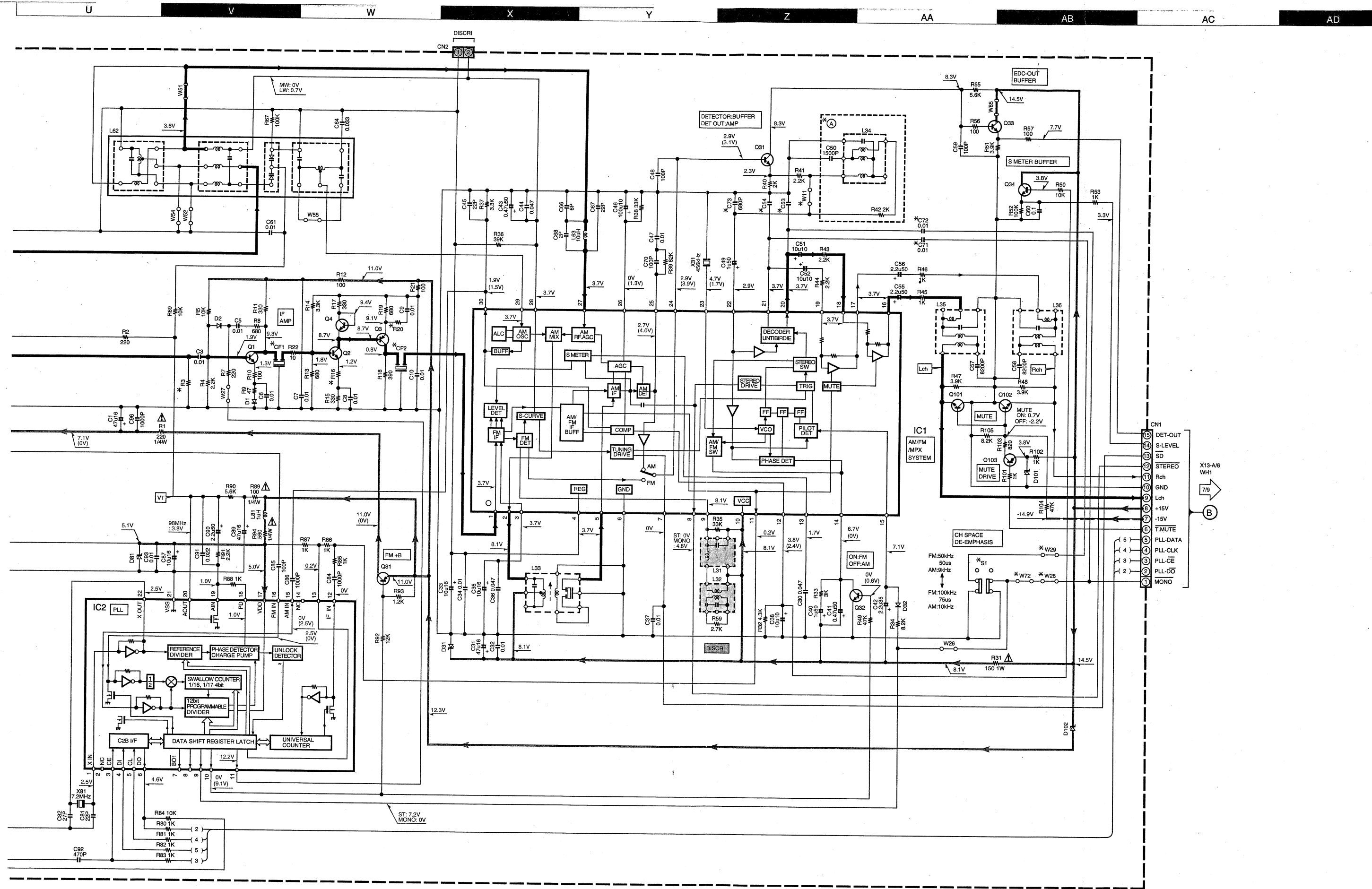


The DC voltage is an actual reading measured with a high impedance type voltmeter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB

(X08-273X-XX) (A/2)



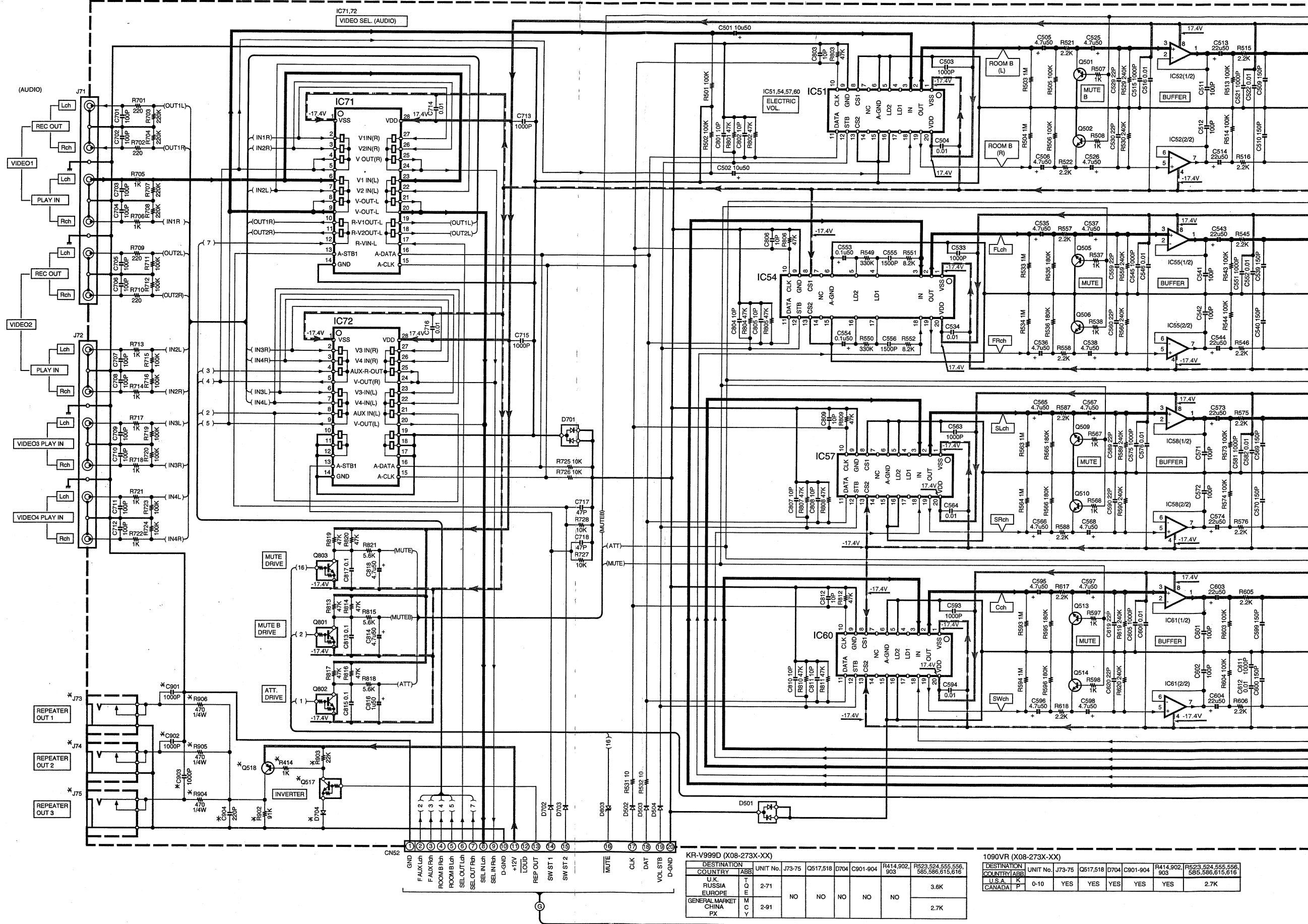


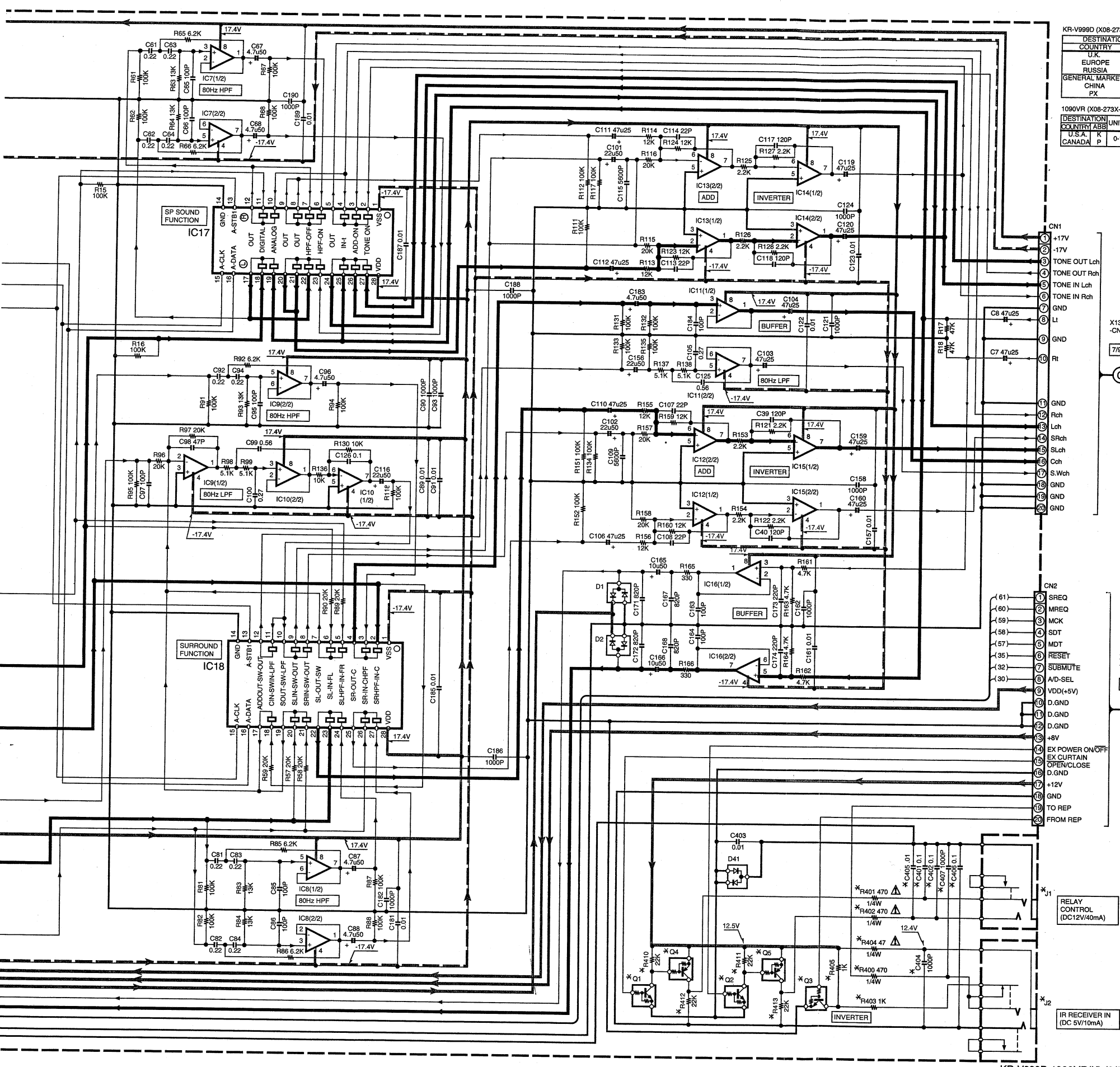
KR-V999D,1090VR(K) (2/9)

Y05-3300-10

KR-V999D/1090VR
KENWOOD

(X08-273X-XX) (B/2)





KR-V999D (X08-273X-XX)

DESTINATION	COUNTRY	ABB	UNIT NO	J1,2	D1-5	C401,402,404-407	C401,402,404-407
U.K.	EUROPE	E	2-71	NO	NO	NO	NO
RUSSIA	GENERAL MARKET	R	2-91	NO	NO	NO	NO
U.S.A.	CHINA	C					
PX							

1090VR (X08-273X-XX)

DESTINATION	COUNTRY	ABB	UNIT NO	J1,2	D1-5	C401,402,404-407	C401,402,404-407
U.S.A.	CHINA	C	0-10	YES	YES	YES	YES
CANADA	P						

- (X08-) (A/2)
- IC1-16 : NJM4580ED or NJM4580E
 - IC17 : TC9163AF
 - IC18 : TC9162AF
 - IC19,20 : TC7W00FU
 - IC31,37,38 : TA7805S or uPC7805AHF
 - IC32 : uPD78016FGS22
 - IC33 : DSPF5600FJ81
 - IC34 : CS4226-KQ
 - IC35,39 : TC74HC04AF
 - IC36 : LH64256CK-70
- Q1-3 : UN5212 or DTC124EUA
Q4,5 : UN5112 or DTA124EUA
- D1,2,6,41 : DA204K
D3-5 : MA110
- SIGNAL LINE
GND LINE
+B LINE
-B LINE

UN5219
2SA1586
2SC2714
2SC4081
2SC4116

2SB1308

MM1067XD

TC74HC4051AP
TC74HC4053AP

NJU3713D

SAA6579SN
761200N

2SA1123
2SA1534A
2SA992
2SC1845
2SC2003
2SC2631

2SC28782S
C3940A2S
D863

DTA113ZSA
DTA124ESA
DTC124ESA
DTC143TSA
UN4112

2SA1048
2SC2458

2SD2012

2SD1757K

NJM4565D-
DNJM4580E

2SA1535
2SB1370
2SD2061

UN4212
UN4216
UN4219
2SA1309A

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

KR-V999D,1090VR(K) (3/9)

Y05-3300-10

CC

CD

CE

CF

CG

CH

CI

CJ

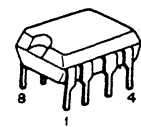
CK

CL

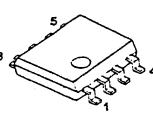
CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

MC14577CP
NJM4580DNJ
M4580D-D



NJM4565M
NJM4580ED
TC7W00FU



UPC7805AHF



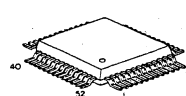
DA204K



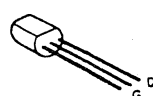
UN5212



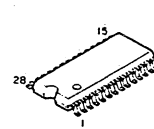
UPD16311



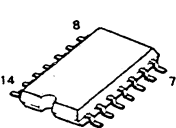
2SK246



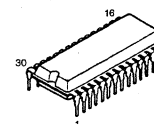
TC9162AF
TC9163AF



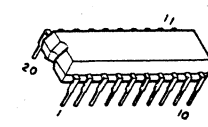
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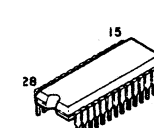
LA1836



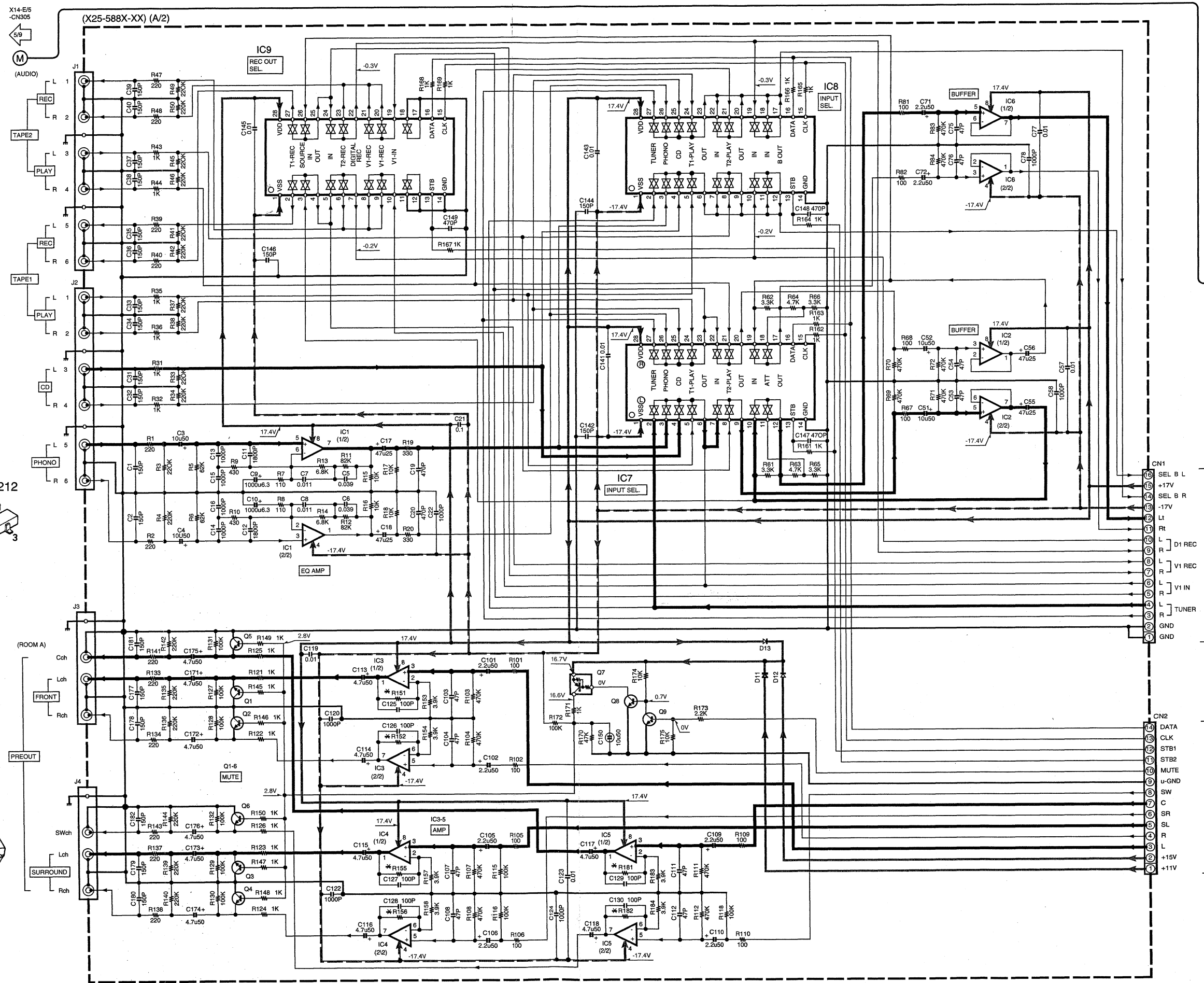
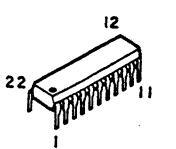
TC9412APA

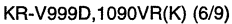


TC9162N
TC9164N



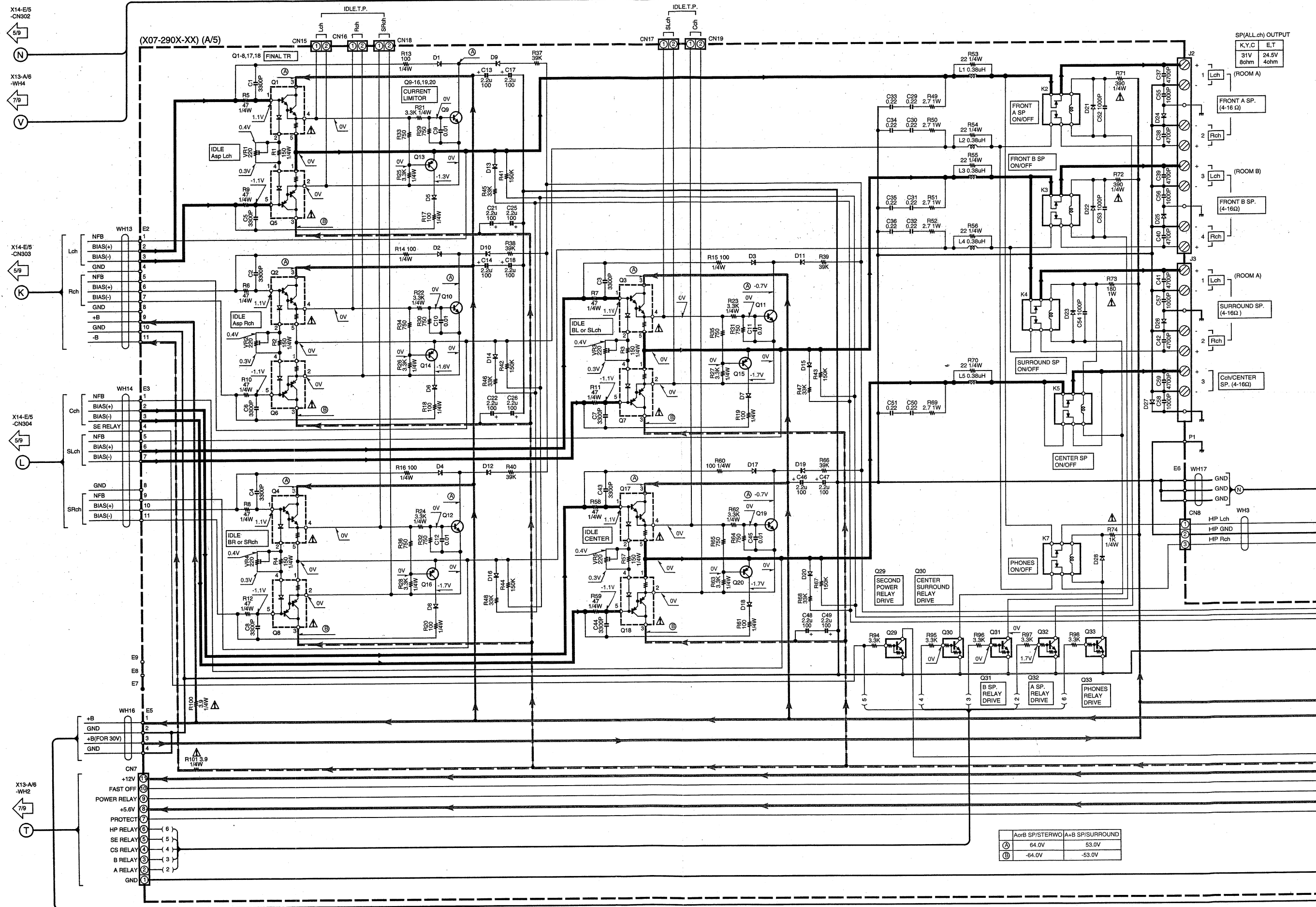
LC72131

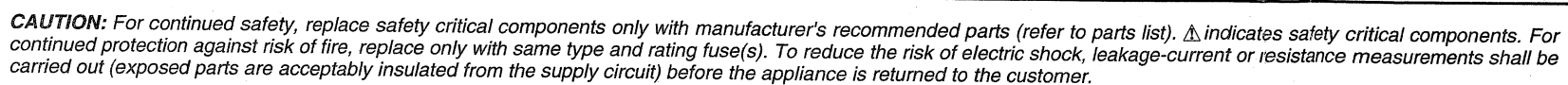




Y05-3300-10

KENWOOD





EK

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EO

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EQ

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ES

ET

X13-B/6

-CN403



(X14-430X-XX) (A/5)

ANODE CONNECTION

	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G
P1	TA	a	a	a	a	a	a	a	a	a	FM
P2	NEWS	j	j	j	j	j	j	j	j	j	AM
P3	INFO.	h	h	h	h	h	h	h	h	h	kHz
P4	RDS	k	k	k	k	k	k	k	k	k	MHz
P5	EON	b	b	b	b	b	b	b	b	b	AC-3
P6	PTY	f	f	f	f	f	f	f	f	f	SURROUND
P7	TP	g	g	g	g	g	g	g	g	g	3 STEREO
P8	SP.	m	m	m	m	m	m	m	m	m	S.DIRECT
P9	(UPPER)	c	c	c	c	c	c	c	c	c	M.INPUT
P10	(UPPER)	e	e	e	e	e	e	e	e	e	DSP
P11	ROOM	r	r	r	r	r	r	r	r	r	LOUDNESS
P12	(LOWER)	n	n	n	n	n	n	n	n	n	TAPE 2
P13	(LOWER)	p	p	p	p	p	p	p	p	p	MEMORY
P14	-	d	d	d	d	d	d	d	d	d	AUTO
P15	-	-	-	-	-	-	-	-	-	-	STEREO
P16	-	-	-	-	-	-	-	-	-	-	TUNED

IC1 : NJM4565L-D
IC2 : NJM4565D-D
IC101 : UPD16311
IC102 : SAA6579

Q1,2,101,102 : 2SC2458(Y,GR) or
2SC3311A(Q,R)
Q151 : 2SC1534A(R,S)
Q152 : 2SA1048(Y,GR) or
2SA1309A(Q,R)

D1-4,102,107-115 : 1SS193 or
HSS104
D101,103 : 1SS131 or
HSS104A
D104-106 : B30-2509-05
D151,152 : RD3.3ES(B2) or
HZS3.3N(B2)

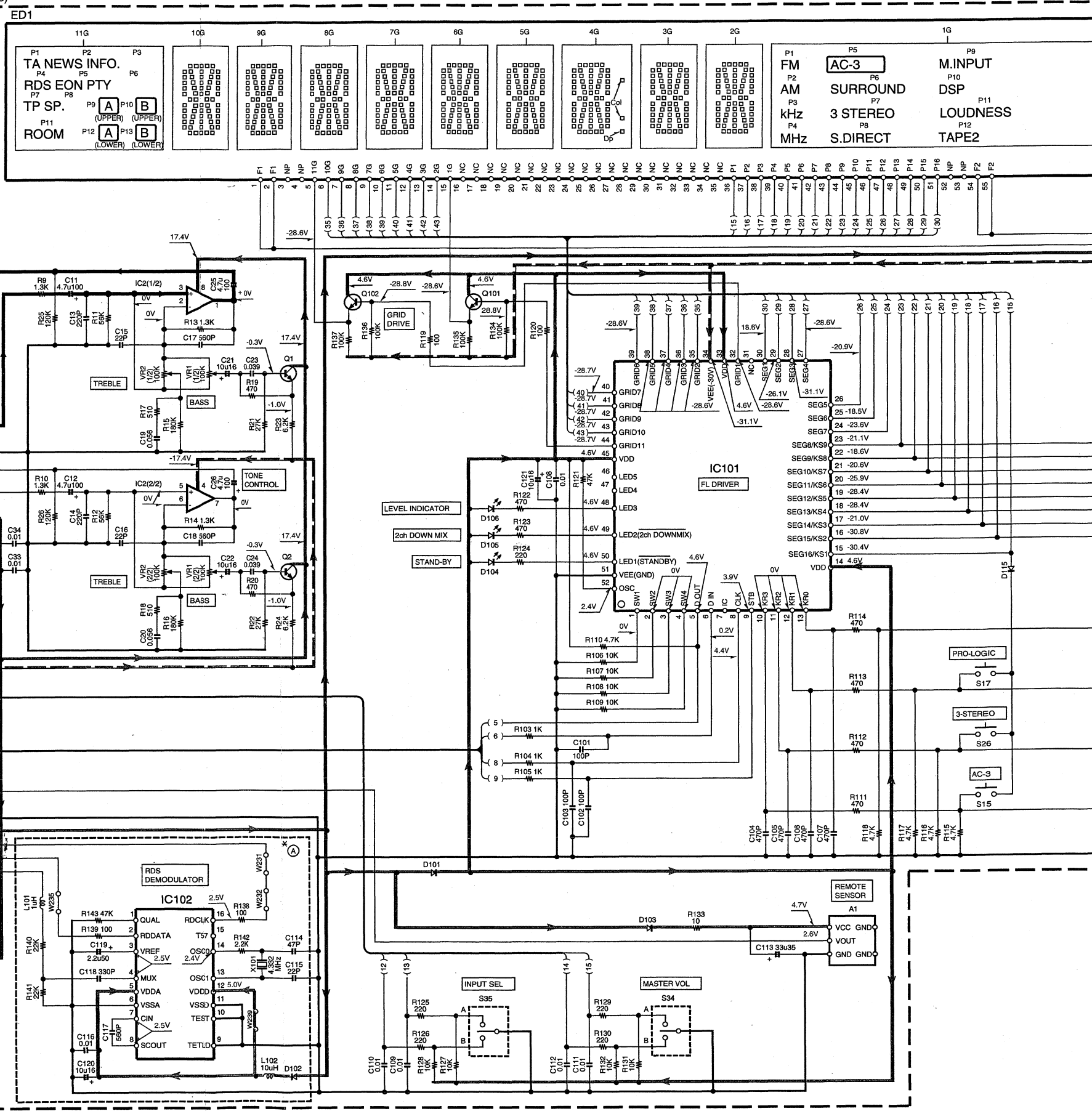
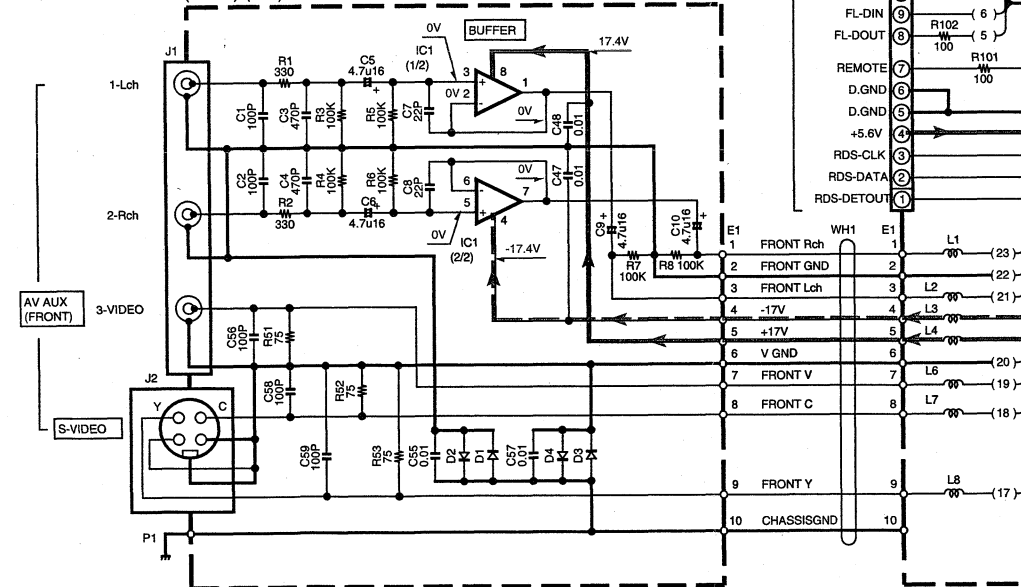
D153 : RD11ES(B2) or
HZS11N(B2)
A1 : W02-2561-05
ED : 11-MT-110GK

X13-A/6

-CN111



(X14-) (B/5)



KR-V999D (X07-290X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	F1	F2	F3	T1	J1	R93	WH1	WH2	W181	W182	W183	CN5	CN14	P3,4	CN3,4	K1
GENERAL MARKET	M	0-21			T3.15AL 250V		L07-0865-05	E03-0149-05		E35-1325-05	E35-1326-05		NO	NO	NO	YES	YES	YES	
CHINA	C	3-01			NO	NO	L07-2114-05	E03-0330-05		E35-1325-05	E35-1326-05		YES	NO	NO	NO	NO	NO	
PX	Y	2-91			T3.15AL 250V		L07-0865-05	E03-0148-05		E35-1325-05	E35-1326-05		YES	NO	NO	NO	YES	YES	
U.K.	T	0-51					L07-0867-05	E03-0310-05		E35-1426-05	E35-1828-05		NO	YES	NO	NO	NO	NO	
EUROPE	E	2-71			NO		T2.5AL 250V	E03-0148-05		E35-1426-05	E35-1828-05		NO	YES	NO	YES	YES	YES	
RUSSIA	Q	3-81			NO		L07-2114-05	E03-0148-05		E35-1426-05	E35-1828-05		YES	NO	NO	YES	YES	YES	

KR-V999D (X13-747X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	C421	R401	W301	WH404	F11-13	F14	F15	S1
U.K.	T	2-71					WH404 405	F11-13, 17	F14	F15, 16	S1
GENERAL MARKET	M	0-21		YES	NO	YES	YES	T1.25A L 250V	T500mA L 250V	T1.6A L 250V	YES
CHINA	C	3-01		NO	NO	NO	NO				NO
RUSSIA	Q	3-81		NO	NO	NO	NO				NO
PX	Y	2-91		NO	NO	NO	NO				NO

1090VR (X07-290X-XX)

DESTINATION COUNTRY ABB			UNIT No.	F1	F2	F3	T1	J1	R93	WH1	WH2	W181	W182	W183	CN5	CN14	P3,4	CN3,4	K1
U.S.A.	K	P	0-10	10A 125V	NO	NO	L07- 0864-05	E03- 0148-05	YES	E35- 1426-05	E35- 1828-05	YES	YES	YES	YES	NO	NO	NO	S76-0065-05 TV-8

1090VR (X13-747X-XX)

DESTINATION	COUNTRY	ABB	UNIT No.	C421	R401	W301	WH404	F11-13	F14	F15	S1
U.S.A.	K	0-10		NO	YES	NO	NO	1.25A 125V	1A 125V	1.6A 125V	NO
CANADA	P	0-10		NO	YES	NO	NO	1.25A 125V	1A 125V	1.6A 125V	NO

(X07-)
Q1-4,17
Q5-8,18
Q9-12,19
Q13-16,20,21
Q22,23
Q24
Q25,37
Q26,27,29-33
Q28,36,38
Q34
Q35

TRAIR4N 5*
TRAIR4P 5*
2SC2631(R,S)
2SC992(F,E)
2SC1845(F,E)
2SD2061(E,F) or 2SD2012
UN4216 or DTC143TSA
UN4218 or DTC113ZSA
UN4212 or DTC124ESA
2SC2003(L,K)
2SC3940A(R,S) or 2SD863(E,F)

D1-28,31,35-37,
43,45-47
D29
D30
D32,33
D34
D38-41,405
D42
D44
D401-404
D406,407

1SS131 or HSS104A
RD11ES(B2) or HZS11N(B2)
RD15ES(B2) or HZS15N(B2)
D5FB20-4002-L2
RD6.2ES(B2) or HZS6.2N(B2)
S5688B or 1SR139-400
RD2.7ES(B2) or HZS2.7N(B2)
RD5.1S(B2) or HZS5.1S(B2)
1B4B41
RD7.5S(B2) or HZS7.5S(B2)

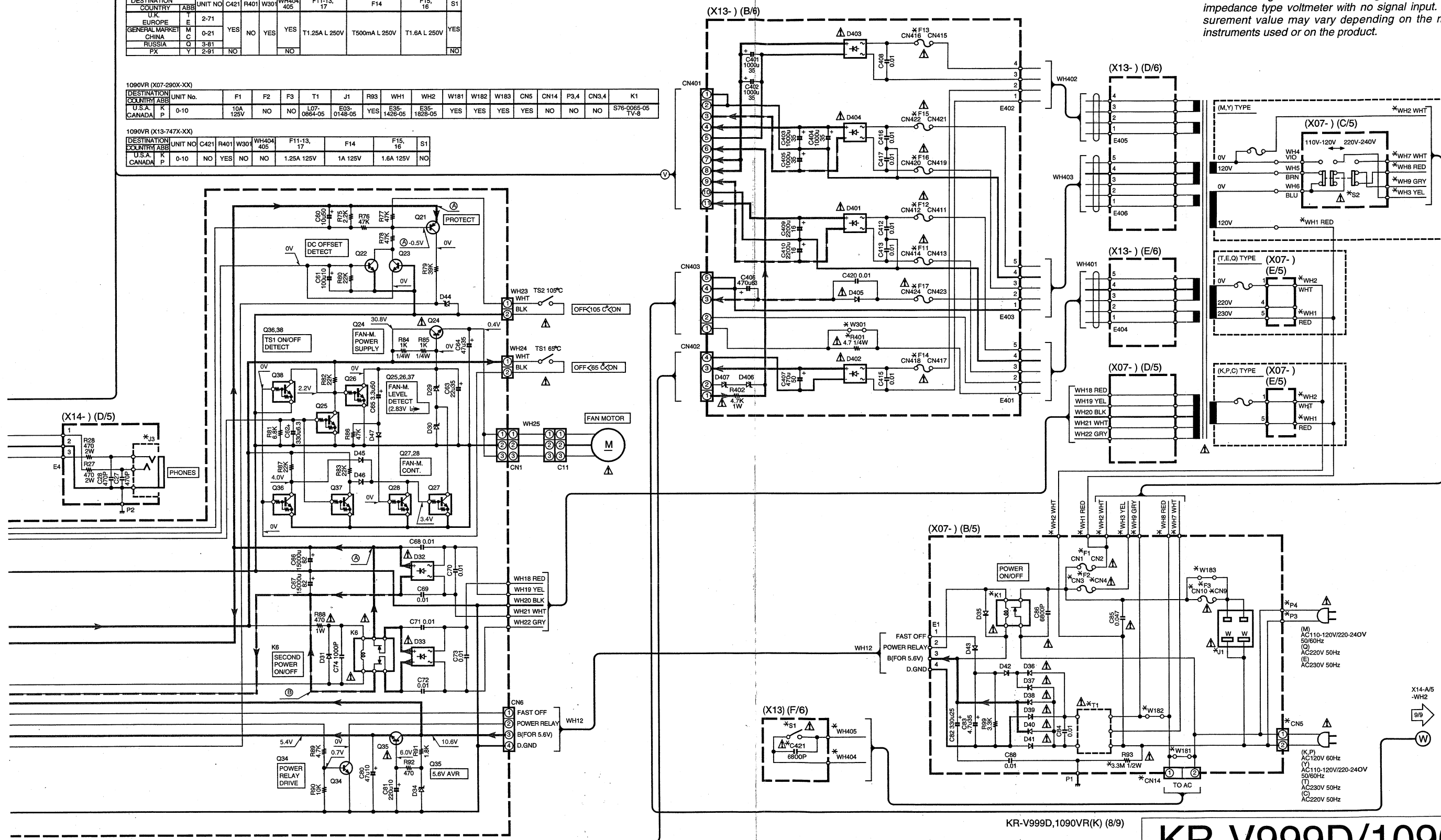
(X13-)
D401-404
D405
D406,407

1B4B41
S5688B or 1SR139-400
RD7.5S(B2) or HZS7.5S(B2)

SIGNAL LINE
GND LINE
+B LINE
-B LINE

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



KR-V999D,1090VR(K) (8/9)

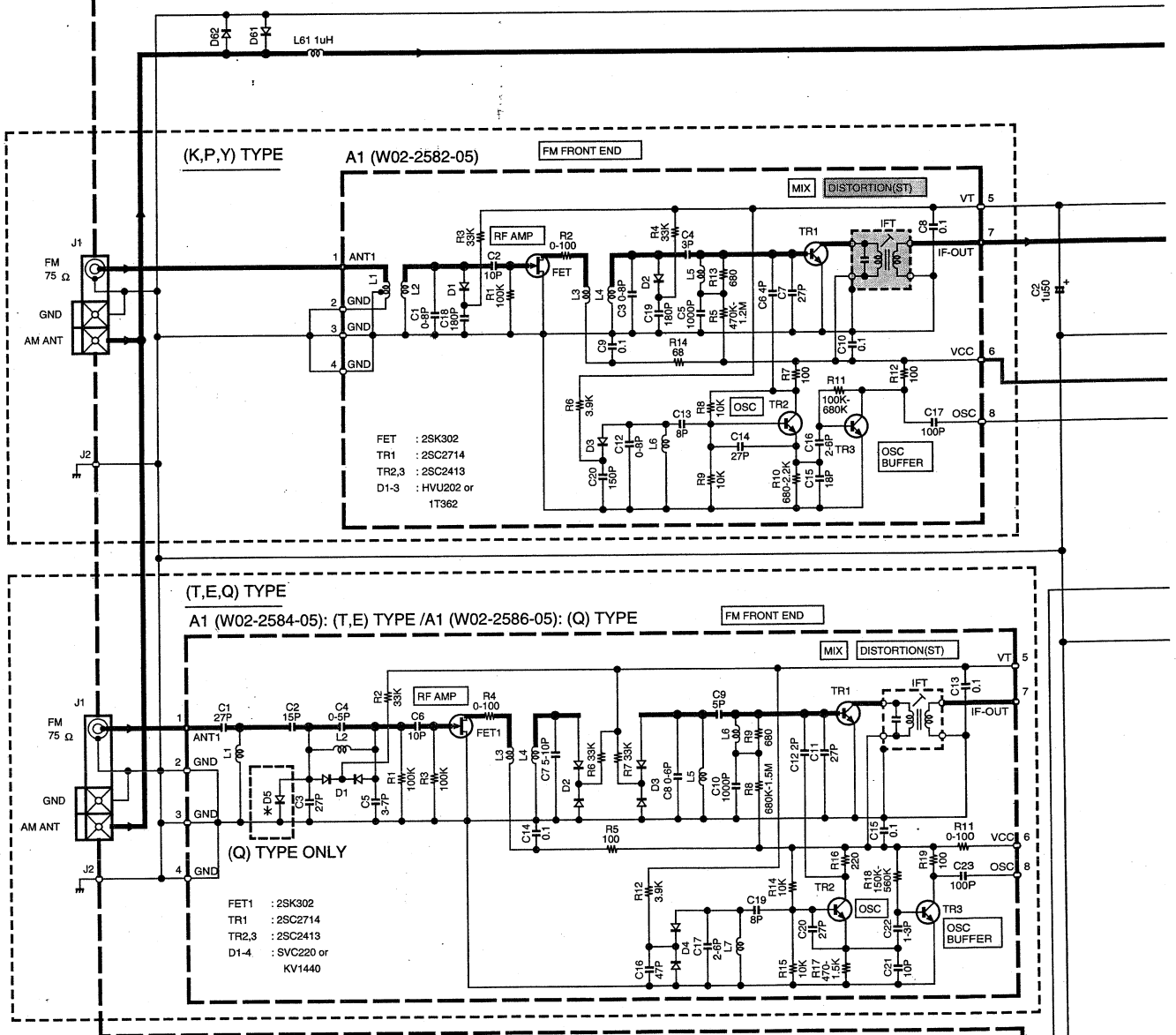
Y05-3300-10

KR-V999D/1090VR
KENWOOD

(X05-468X-XX) (K,P,T,E,Q,Y) TYPE

The DC voltage is an actual reading measured with a high impedance type volt-meter as the AM/FM signal generator is specified to the conditions as shown in the list below. The measurement value may vary depending on the measuring instruments used or on the product. The value shown in () is actual reading measured in the AM mode.

MODE	CARRIER	MODULATION		ANT INPUT
		FREQUENCY	DEVIATION	
FM	98MHz	1kHz	STEREO 67.5kHz 7.5kHz(Pilot)	60dB
AM	1000(999)kHz	400Hz	MONO 30% MOD	60dB



IC1 : LA1836
IC2 : LC72131

Q1,2,4,31-34 : 2SC4081(R,S) or 2SC4119(Y,GR)
Q3,81,103 : 2SA1576A(R,S) or 2SA1586(Y,GR)
Q101,102 : 2SD1757K

D1,2,32,61,62 : 1SS133 or HSS104

D31 : RD8.2ES(B2) or HZS8.2N(B2)
D81 : RD5.1ES(B2) or HZS5.1(B2)
D101 : RD3.3ES(B2) or HZS3.3N(B2)
D102 : RD2.7ES(B2) or HZS2.7N(B2)

BAND	FREQ	VT
FM	LF	1.6V
	HF	7.8V
AM	LF	1.3V
	HF	5.0V

LF: LOWEST FREQUENCY
HF: HIGHEST FREQUENCY

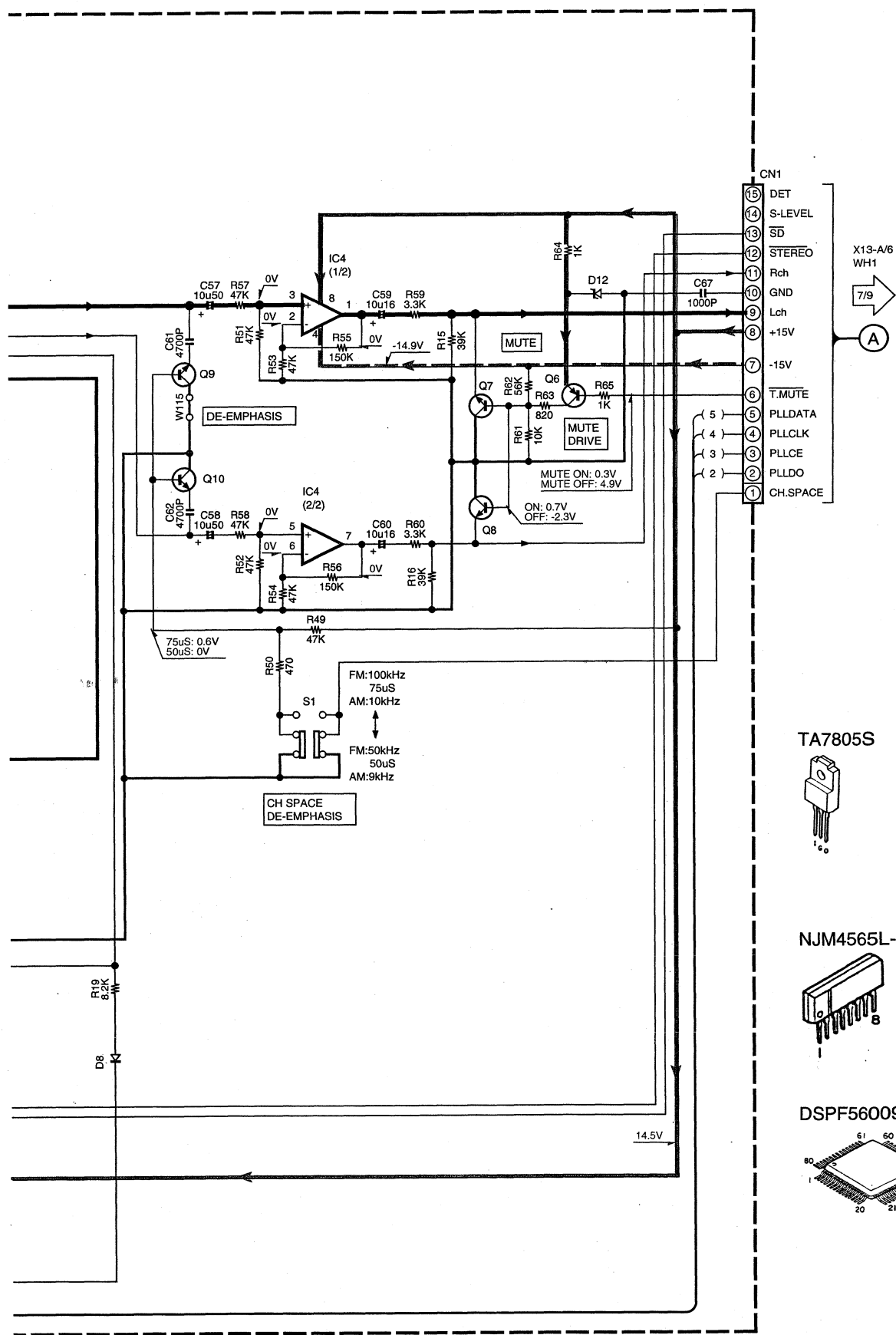
1090VR (X05-468X-XX)

DESTINATION COUNTRY		UNIT No.	A	R3	R16, 20	C53, 54	C71, 72	C73	CF1,2	S1	W11	W28,29 72
U.S.A.	K	0-11	NO	560	15	0.033	NO	YES	L72-0596	NO	YES	NO
CANADA	P											

KRV-999D (X05-468X-XX)

DESTINATION COUNTRY		UNIT No.	(A)	R3	R16, 20	C53, 54	C71, 72	C73	CF1,2	S1	W11	W28, 72
ABB.												
U.K.	T	2-71	YES	1.8K	10	0.022	NO	NO	L72-0536	NO	NO	NO
EUROPE	E											
RUSSIA	Q	3-81										
PX	Y	2-91										
			NO	560	15		YES	YES	L72-0596	YES	YES	YES

CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.



KR-V999D,1090VR(C) (1/9)

Y05-3300-10

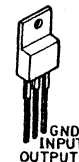
KR-V999D/1090VF

KENWOOD

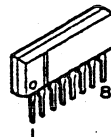
TA7805S



TA79005S



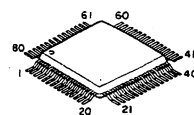
NJM4565L-D



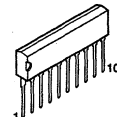
LA1832

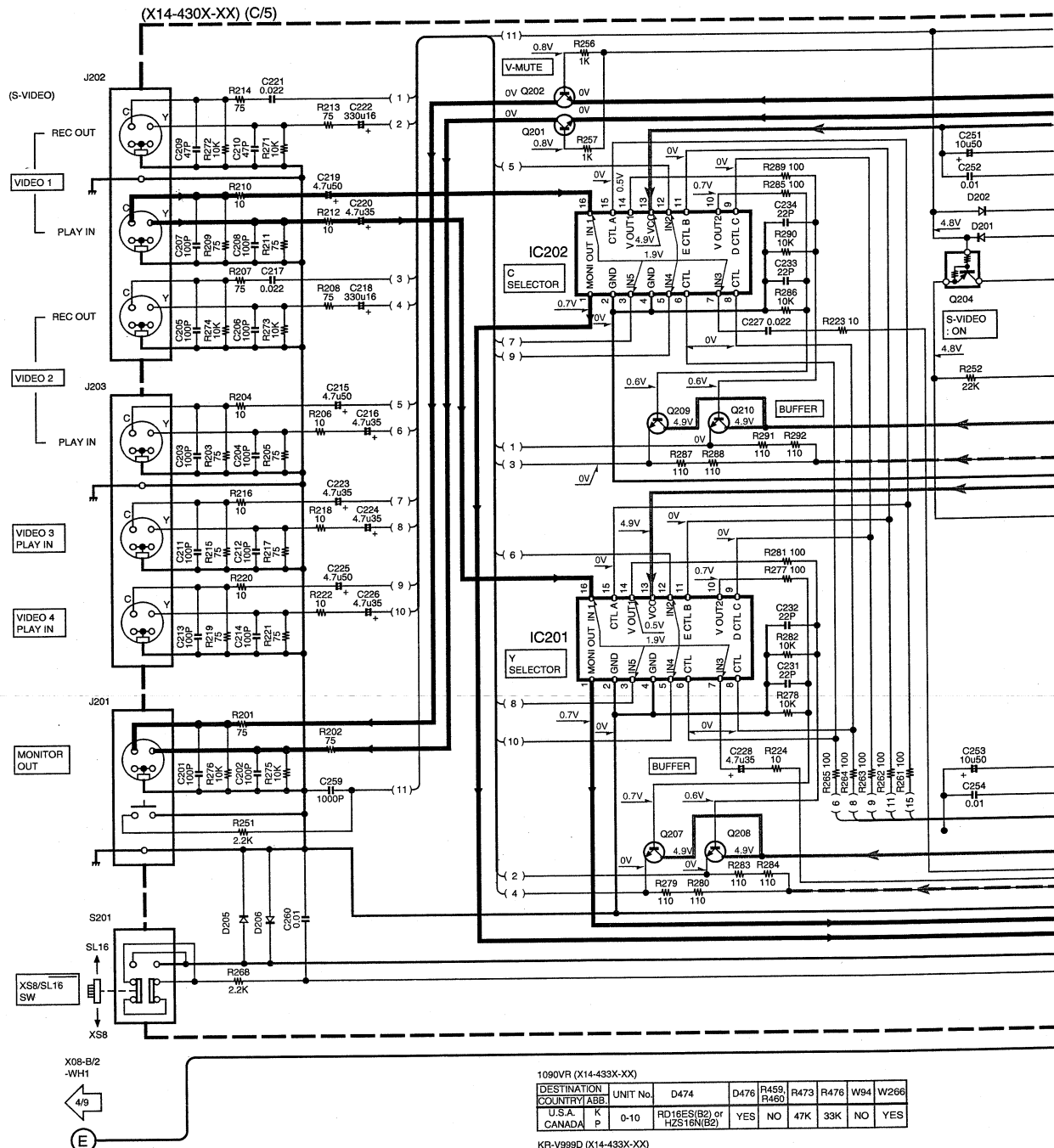


DSPF56009FJ81



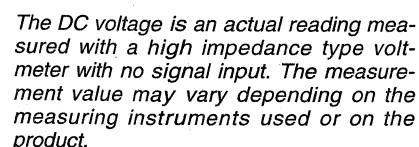
LA7950



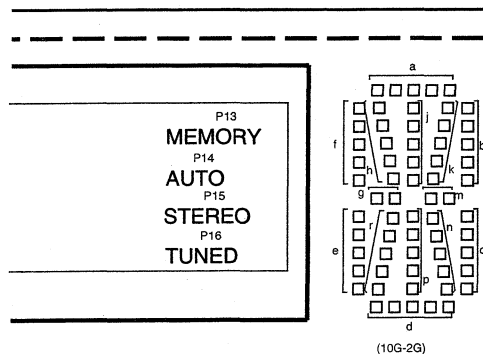


The DC voltage is an actual reading measured with a high impedance type voltmeter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.

— SIGNAL LINE
— GND LINE
— +B LINE
— -B LINE

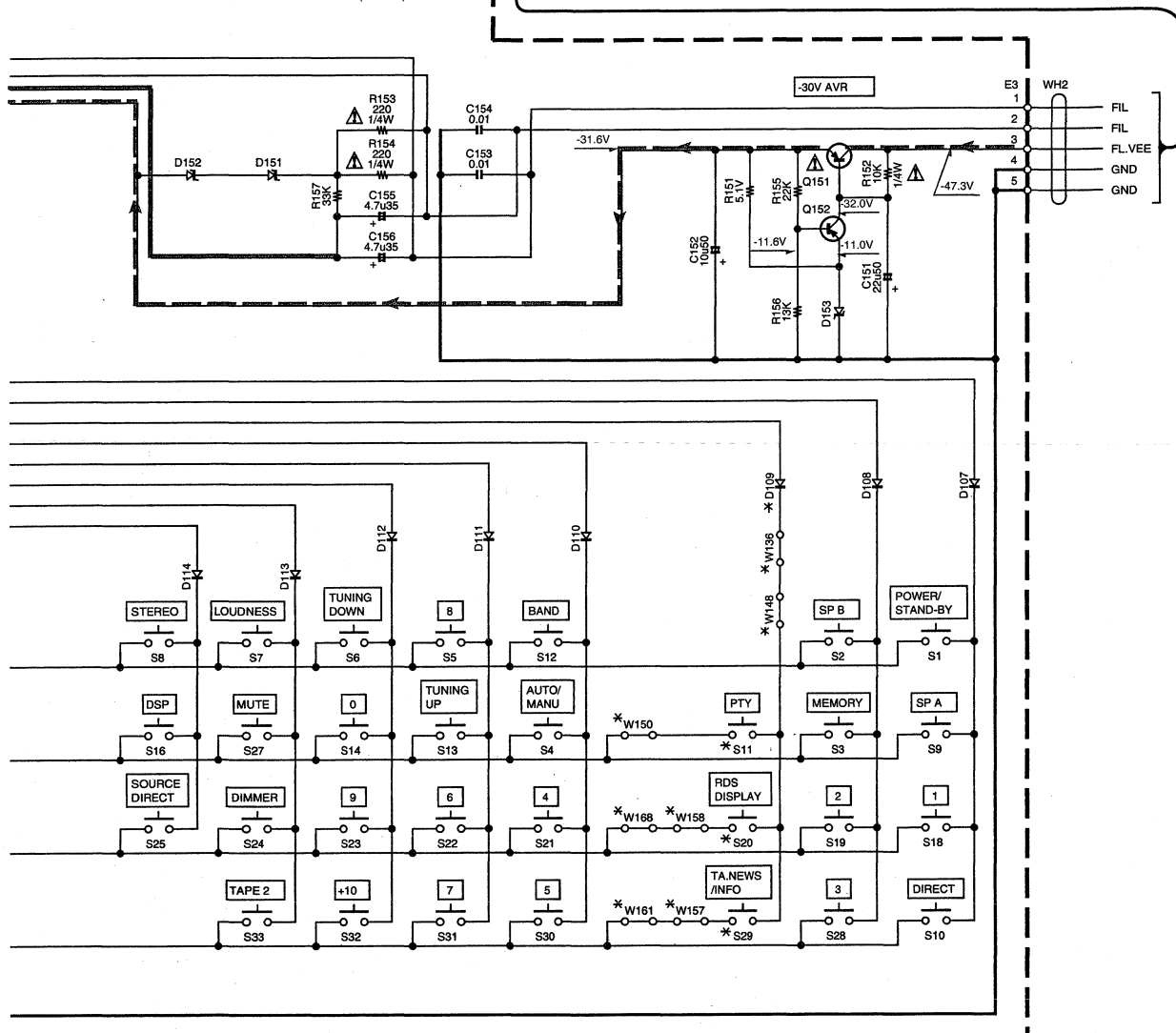


KENWOOD



CAUTION: For continued safety, replace safety critical components only with manufacturer's recommended parts (refer to parts list). Δ indicates safety critical components. For continued protection against risk of fire, replace only with same type and rating fuse(s). To reduce the risk of electric shock, leakage-current or resistance measurements shall be carried out (exposed parts are acceptably insulated from the supply circuit) before the appliance is returned to the customer.

The DC voltage is an actual reading measured with a high impedance type volt-meter with no signal input. The measurement value may vary depending on the measuring instruments used or on the product.



1090VR (X14-433X-XX)

DESTINATION	UNIT No.	(A)	D109	S11,20,29	W136,148,150,157,158,161,168
COUNTRY	ABB.				
U.S.A.	K	0-10	YES	YES	YES
CANADA	P				

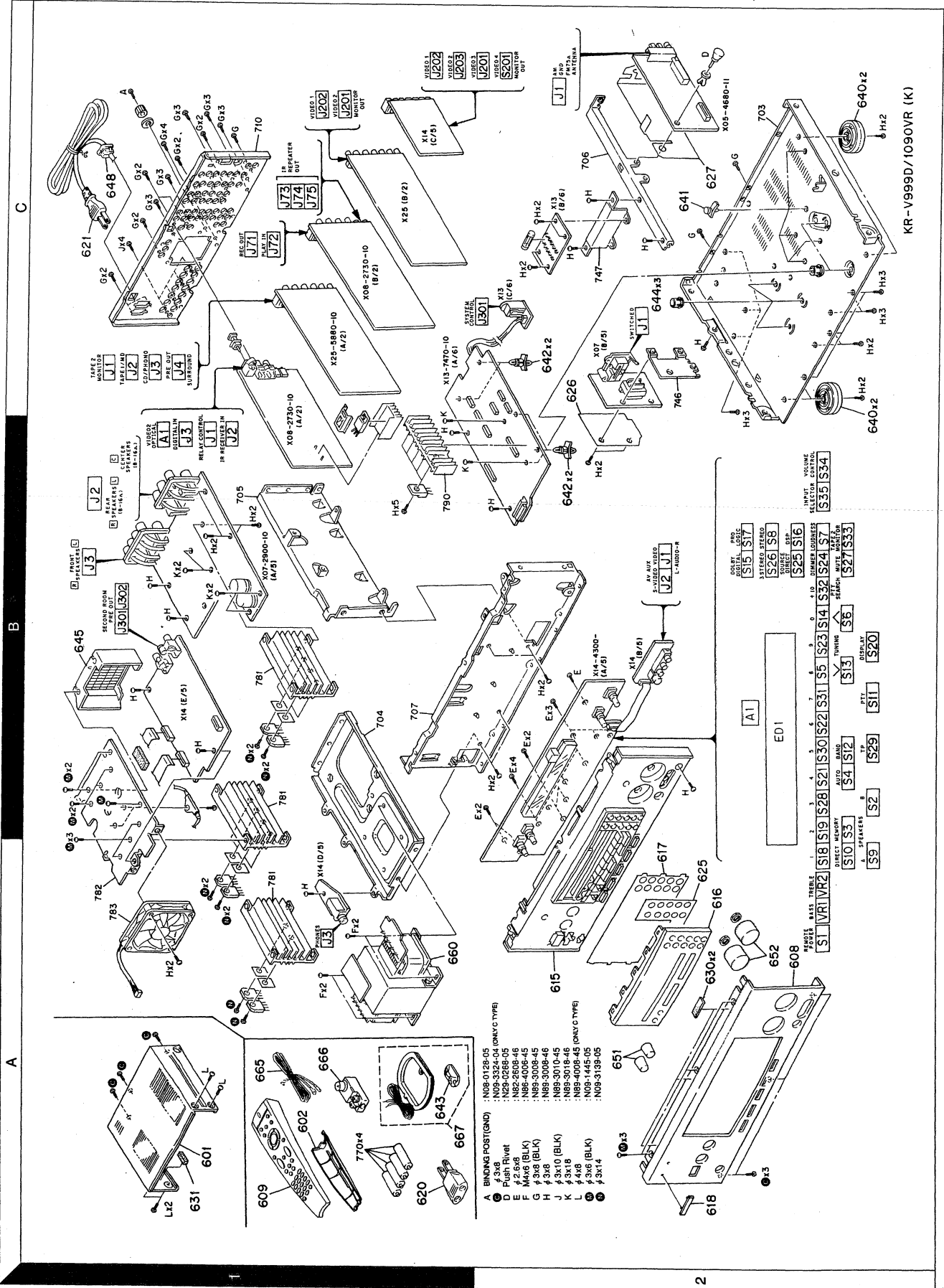
KR-V999D (X14-433X-XX)

DESTINATION	UNIT No.	(A)	D109	S11,20,29	W136,148,150,157,158,161,168
COUNTRY	ABB.				
GENERAL MARKET	M	0-21	NO	NO	NO
CHINA	C				
PX	Y				
U.K.	T	2-71	YES	YES	YES
EUROPE	E				
RUSSIA	Q				

— SIGNAL LINE
— GND LINE
— +B LINE
- - - B LINE

KR-V999D,1090VR(K) (9/9)

KR-V999D/1090VR EXPLODED VIEW (UNIT)



KR-V999D/1090VR

PARTS LIST

* New Parts
Parts without **Parts No.** are not supplied.
Les articles non mentionnés dans le **Parts No.** ne sont pas fournis.
Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
KR-V999D/1090VR						
601	1A	*	A01-3394-11	METALLIC CABINET(GOLD)	C	
601	1A	*	A01-3396-01	METALLIC CABINET(BLACK)	KPYMTE	
601	1A	*	A01-3396-01	METALLIC CABINET(BLACK)	Q	
602	1A	*	A09-0386-08	BATTERY COVER (FOR RC-R0905)		
608	2A	*	A60-1046-12	PANEL	KPY	
608	2A	*	A60-1047-02	PANEL (BLACK)	TEQ	
608	2A	*	A60-1076-02	PANEL (BLACK)	M	
608	2A	*	A60-1077-02	PANEL (GOLD)	C	
609	2A	*	A70-1114-05	REMOTE CONTROLLER (RC-R0905)		
615	2A	*	B01-0525-11	PANEL ESCUTCHEON	M	
615	2A	*	B01-0527-11	PANEL ESCUTCHEON	KPYTEQ	
615	2A	*	B01-0532-11	PANEL ESCUTCHEON	C	
616	2A	*	B10-2297-02	FRONT GLASS	KPYTEQ	
616	2A	*	B10-2298-02	FRONT GLASS	M	
616	2A	*	B10-2332-02	FRONT GLASS	C	
617	1A	*	B11-0295-02	COLOR FILTER	KPYMTE	
617	1A	*	B11-0295-03	COLOR FILTER	Q	
617	1A	*	B11-0344-13	COLOR FILTER	C	
618	2A	*	B43-0302-04	KENWOOD BADGE	KPYMTE	
618	2A	*	B43-0302-04	KENWOOD BADGE	Q	
618	2A	*	B43-0305-04	KENWOOD BADGE	C	
-	-	*	B46-0197-00	QUESTIONNAIRE CARD	K	
-	-	*	B46-0310-03	WARRANTY CARD	TEQ	
-	-	*	B46-0326-03	WARRANTY CARD	C	
-	-	*	B46-0330-03	WARRANTY CARD	KY	
-	-	*	B46-0336-03	WARRANTY CARD	P	
-	-	*	B58-0513-04	CAUTION CARD (PRESET220-240)	Y	
-	-	*	B58-0964-13	CAUTION CARD (UL)	KY	
-	-	*	B58-0965-13	CAUTION CARD (T1X PL)	T	
-	-	*	B58-0966-13	CAUTION CARD (ELM PL)	CE	
-	-	*	B58-0967-03	CAUTION CARD (P PL)	P	
-	-	*	B58-1526-03	CAUTION CARD (P4,ORI,A4,1(Q)	Q	
-	-	*	B59-1104-00	SERVICE DIRECTORY	KPY	
-	-	*	B60-3008-00	INSTRUCTION MANUAL(ENGLISH)		
-	-	*	B60-3009-00	INSTRUCTION MANUAL(ENGLISH)	T	
-	-	*	B60-3010-00	INSTRUCTION MANUAL(ENGLISH)	P	
-	-	*	B60-3011-00	INSTRUCTION MANUAL(FRENCH)	CM	
-	-	*	B60-3012-00	INSTRUCTION MANUAL(FRENCH)	E	
-	-	*	B60-3013-00	INSTRUCTION MANUAL(SPANISH)	M	
-	-	*	B60-3014-00	INSTRUCTION MANUAL(ITALIAN)	E	
-	-	*	B60-3124-00	INSTRUCTION MANUAL(GERMAN)	E	
-	-	*	B60-3126-00	INSTRUCTION MANUAL(CHINESE)	M	
-	-	*	B60-3127-00	INSTRUCTION MANUAL(CHINESE)	C	
-	-	*	B60-3251-00	INSTRUCTION MANUAL(DUTCH)	E	
-	-	*	B60-3252-00	INSTRUCTION MANUAL(SPANISH)	E	
-	-	*	B60-3299-00	INSTRUCTION MANUAL(RUSSIAN)	Q	
-	-	*	B60-3300-00	INSTRUCTION MANUAL(POLISH)	Q	
620	1A	*	E03-0343-05	AC PLUG ADAPTER	M	
621	1C	*	E30-2579-05	AC POWER CORD	EQM	
621	1C	*	E30-2739-05	AC POWER CORD	Y	
621	1C	*	E30-2787-05	AC POWER CORD	KP	
621	1C	*	E30-2791-05	AC POWER CORD	T	

L : Scandinavia
Y : PX(Far East, Hawaii)
Y : AAFES(Europe)

K : USA
P : Canada
E : Europe
X : Australia
M : Other Areas

R : Mexico
G : Germany
Q : Russia

Δ indicates safety critical components.

* New Parts
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Teile ohne **Parts No.** werden nicht geliefert.

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
621	1C	*	E30-2825-05	AC POWER CORD	C	
625	2A	*	F19-1076-03	BLIND PLATE	C	
626	2C	*	F20-3503-14	INSULATING BOARD		
627	2C	*	F20-3504-03	INSULATING BOARD		
630	2A	*	G11-0155-14	SOFT TAPE (40X9X2)		
631	1A	*	G11-1167-04	SOFT TAPE		
-	-	*	H10-7312-02	POLYSTYRENE FOAMED FIXTURE	CTM	
-	-	*	H10-7313-02	POLYSTYRENE FOAMED FIXTURE	Q	
-	-	*	H12-2328-04	PACKING FIXTURE	T	
-	-	*	H25-0232-04	PROTECTION BAG (235X350X0.03)	KPYMCE	
-	-	*	H25-0232-04	PROTECTION BAG (235X350X0.03)	Q	
-	-	*	H25-0651-04	PROTECTION BAG	T	
-	-	*	H25-0661-04	PROTECTION BAG	KPY	
-	-	*	H50-2196-04	ITEM CARTON CASE	E	
-	-	*	H50-2197-04	ITEM CARTON CASE	T	
-	-	*	H50-2260-04	ITEM CARTON CASE	M	
-	-	*	H50-2402-04	ITEM CARTON CASE	C	
-	-	*	H50-2403-04	ITEM CARTON CASE	Q	
-	-	*	H50-2480-04	ITEM CARTON CASE		
640	2B,2C	*	J02-1147-13	FOOT (D=46,H=18.5)	KPYMTE	
640	2B,2C	*	J02-1147-13	FOOT	Q	
640	2C	*	J02-1170-03	FOOT	C	
641	2C	*	J19-3300-05	UNIT HOLDER		
642	2C	*	J19-3324-15	UNIT HOLDER		
643	1A	*	J19-3645-05	ANT. HOLDER	M	
644	2C	*	J19-3732-04	UNIT HOLDER		
645	1B	*	J19-5778-03	HOLDER CORD BUSHING		
648	1C	*	J61-0098-05	WIRE BAND		
-	-	*	J61-0307-05	WIRE BAND		
651	2A	*	K29-6249-04	KNOB	KPYMTE	
651	2A	*	K29-6249-04	KNOB	Q	
651	2A	*	K29-6556-04	KNOB (GOLD)	C	
652	2A	*	K29-6251-04	KNOB	KPYMTE	
652	2A	*	K29-6251-04	KNOB	Q	
652	2A	*	K29-6557-04	KNOB (GOLD)	C	
652	2A	*	K27-2176-04	KNOB (BUTTON)	MTEQ	
-	-	*	K27-2177-04	KNOB (BUTTON : GOLD)	C	
660	1A	*	L07-2272-05	POWER TRANSFORMER	KP	
660	1A	*	L07-2273-05	POWER TRANSFORMER	YM	
660	1A	*	L07-2274-05	POWER TRANSFORMER	TEQ	
660	1A	*	L07-2355-05	POWER TRANSFORMER	C	
665	1A	*	T90-0176-05	T TYPE ANTENNA		
666	1A	*	T90-0185-05	ANTENNA ADAPTOR		
667	1A	*	T90-0820-05	LOOP ANTENNA		
TUNER UNIT (X05-467X-XX)						
C1 2			CK73FB1H103K	CHIP C	0.010UF	K
C5			CK73FB1H102K	CHIP C	1000PF	K
C8			CK73FB1H103K	CHIP C	0.010UF	K
C9			CE04LW1C100M	ELECTRO	10UF	16WV
C10			CK73FB1H473K	CHIP C	0.047UF	K

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R19			RK73FB2A822J	CHIP R		
R20..23			RK73FB2A102J	CHIP R	1/10W	
R24			RK73FB2A562J	CHIP R	1/10W	
R25			RD14NB2E101J	FD	1/10W	
R26			RD14NB2E561J	FD	1/4W	
R27..28			RK73FB2A103J	CHIP R	1/10W	
R29..30			RK73FB2A102J	CHIP R	1/10W	
R31			RK73FB2A103J	CHIP R	1/10W	
R32			RK73FB2A122J	CHIP R	1/10W	
R33			RK73FB2A123J	CHIP R	1/10W	
R41			RS14KB3A271JFR	FL-PROOF RS	1W	
R42			RD14NB2E271J	RD	1/4W	
R44			RK73FB2A101J	CHIP R	1/10W	
R46			RK73FB2A104J	CHIP R	1/10W	
R47			RK73FB2A153J	CHIP R	1/10W	
R48..49			RK73FB2A473J	CHIP R	1/10W	
R50			RK73FB2A471J	CHIP R	1/10W	
R51..54			RK73FB2A473J	CHIP R	1/10W	
R55..56			RK73FB2A154J	CHIP R	1/10W	
R59..60			RK73FB2A332J	CHIP R	1/10W	
R61			RK73FB2A103J	CHIP R	1/10W	
R62			RK73FB2A563J	CHIP R	1/10W	
R63			RK73FB2A821J	CHIP R	1/10W	
R64			RK73FB2A102J	CHIP R	1/10W	
R65			RK73EB2B102J	CHIP R	1/8W	
R73			RK73FB2A681J	CHIP R	1/10W	
W101-106			R92-0670-05	CHIP R	0 OHM	
W108-113			R92-0670-05	CHIP R	0 OHM	
W115			R92-0670-05	CHIP R	0 OHM	
W201-212			R92-0679-05	CHIP R	0 OHM	
S1			S62-0034-05	SLIDE SWITCH		
D1..2			HSS104	DIODE		
D1..2			1SS133	DIODE		
D3..4			HZS5.1N(B2)	ZENER DIODE		
D3..4			RD5.1ES(B2)	ZENER DIODE		
D8			HSS104	DIODE		
D8			1SS133	DIODE		
D10			MA111	DIODE		
D12			HZS3.3N(B2)	ZENER DIODE		
D12			RD3.3ES(B2)	ZENER DIODE		
D13			HZS2.7N(B2)	ZENER DIODE		
D13			RD2.7ES(B2)	ZENER DIODE		
IC1			LA1832	ANALOGUE IC		
IC2			LC72131	MOS-IC		
IC4			NJM4565M	IC(OP AMP X2)		
Q1			2SC2714(R,O)	TRANSISTOR		
Q3			2SA1576A(R,S)	TRANSISTOR		
Q3			2SA1586Y(GR)	TRANSISTOR		
Q5			2SC4081(R,S)	TRANSISTOR		
Q5			2SC4116(Y,GR)	TRANSISTOR		
Q6			2SA1576A(R,S)	TRANSISTOR		
Q6			2SA1586Y(GR)	TRANSISTOR		
Q7..8			2SD1757K	TRANSISTOR		
Q9..10			2SC4081(R,S)	TRANSISTOR		

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C11			CE04LW1H010M	ELECTRO	50WV	
C12			CE04LW1H2R2M	ELECTRO	50WV	
C13			CK73FB1H102K	CHIP C	1000PF	
C14			CE04LW1H010M	ELECTRO	50WV	
C15			CC73FCH1H220J	CHIP C	22PF	
C16			CE04LW1C100M	ELECTRO	10UF	
C17			CK73FB1H562K	CHIP C	5600PF	
C18			CK73FB1H102K	CHIP C	1000PF	
C19			CE04HW1E4R7M	NP-ELEC	25WV	
C20			CK73FB1E104K	CHIP C	0.10UF	
C21..22			CO93FMG1H113J	MYLAR	0.011UF	
C23			CE04LW1H010M	ELECTRO	50WV	
C25			CE04LW1C100M	ELECTRO	10UF	
C26			CE04LW1C470M	ELECTRO	47UF	
C27			CE04LW1H010M	ELECTRO	10UF	
C28			CO93FMG1H223J	MYLAR	0.022UF	
C29			CE04LW1C2R2M	ELECTRO	2.2UF	
C30			CE04LW1C101M	ELECTRO	100UF	
C31			CE04LW1A470M	ELECTRO	47UF	
C32			CK73FB1H103K	CHIP C	0.010UF	
C33			CC73FSL1H101J	CHIP C	100PF	
C34..35			CK73FB1H102K	CHIP C	1000PF	
C36			CC73FCH1H270J	CHIP C	27PF	
C37			CC73FCH1H220J	CHIP C	22PF	
C38			CK73FB1H471K	CHIP C	470PF	
C57..58			CE04LW1H010M	ELECTRO	10UF	
C59..60			CE04LW1C100M	ELECTRO	100UF	
C61..62			CO93FMG1H472J	MYLAR	4700PF	
C63			CC73FCH1H220J	CHIP C	22PF	
C64			CC73FCH1H330J	CHIP C	33PF	
C65			CC73FCH1H040C	CHIP C	4.0PF	
C67			CK73FB1H102K	CHIP C	1000PF	
CN1			E40-4609-05	PIN ASSY		
J1			E70-0052-05	LOCK TERMINAL BOARD		
CF1..2			L72-0531-05	CERAMIC FILTER		
CF3			L72-0593-05	CERAMIC FILTER		
L1			L38-1348-05	COMBINATION COIL		
L2			L30-0911-05	AMIFT		
L3..4			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X1			L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
X2			L78-0637-05	RESONATOR (456KHZ)		
R1			RK73FB2A332J	CHIP R	3.3K	
R2			RK73FB2A681J	CHIP R	680	
R3			RK73FB2A100J	CHIP R	10	
R4..5			RK73FB2A331J	CHIP R	330	
R6			RK73FB2A101J	CHIP R	100	
R7			RK73FB2A473J	CHIP R	47K	
R8			RK73FB2A331J	CHIP R	330	
R12			RK73FB2A102J	CHIP R	1.0K	
R13			RK73FB2A473J	CHIP R	47K	
R15..16			RK73FB2A393J	CHIP R	39K	
R17			RK73FB2A271J	CHIP R	270	
R18			RK73FB2A302J	CHIP R	3.0K	

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
Q9 ,10	2SC4116(Y,GR)			TRANSISTOR		
A1	W02-2582-05			FM FRONT-END ASSY		
TUNER UNIT (X05-468X-XX)						
C1			CE04LW1C470M	ELECTRO	16WV	
C2			CE04LW1H010M	ELECTRO	1.0UF	
C3			CK73FB1H103K	CHIP C	0.010UF	
C5 ,10			CK73FB1H103K	CHIP C	0.010UF	
C30			CK73EB1E473K	CHIP C	0.047UF	
C31			CE04LW1C470M	ELECTRO	16WV	
C32			CK73FB1H103K	CHIP C	0.010UF	
C33			CE04LW1C100M	ELECTRO	10UF	
C34			CK73FB1H103K	CHIP C	0.010UF	
C35			CE04LW1C100M	ELECTRO	10UF	
C36			CK73FB1E473K	CHIP C	0.047UF	
C37			CK73FB1H103K	CHIP C	0.010UF	
C38			C90-3217-05	ELECTRO	10WV	
C40			C90-3253-05	ELECTRO	1.0UF	
C41			C90-3251-05	ELECTRO	0.47UF	
C42			C90-3240-05	ELECTRO	2.2UF	
C43			CE04LW1HR47M	ELECTRO	0.47UF	
C44			CK73FB1E473K	CHIP C	0.047UF	
C45			CK73FC1H220J	CHIP C	22PF	
C46			CE04LW1A101M	ELECTRO	100UF	
C47			CK73FB1H103K	CHIP C	0.010UF	
C48			CK73FSL1H101J	CHIP C	100PF	
C49			CE04LW1H010M	ELECTRO	1.0UF	
C50			CK73FB1H152K	CHIP C	1500PF	
C51 ,52			C90-3217-05	ELECTRO	10WV	
C53 ,54			CK73FB1H223K	CHIP C	0.022UF	
C53 ,54			CK73FB1H333K	CHIP C	0.033UF	
C55 ,56			CE04LW1H2R2M	ELECTRO	2.2UF	
C57 ,58			CK73FB1H822K	CHIP C	8200PF	
C59			CK73FSL1H101J	CHIP C	100PF	
C60			CK73FB1E104K	CHIP C	0.10UF	
C61			CK73FB1H103K	CHIP C	0.010UF	
C64			CK73FB1H333K	CHIP C	0.033UF	
C66			CK73FB1H060D	CHIP C	6.0PF	
C67			CK73FC1H220J	CHIP C	22PF	
C68			CK73FSL1H020C	CHIP C	2.0PF	
C70			CK73FSL1H101J	CHIP C	100PF	
C71 ,72			CK73FB1H103K	CHIP C	0.010UF	
C73			CK73FB1H681K	CHIP C	680PF	
C81			CK73FC1H220J	CHIP C	22PF	
C82			CK73FC1H270J	CHIP C	27PF	
C84			CK73FB1H102K	CHIP C	1000PF	
C85			CK73FSL1H101J	CHIP C	100PF	
C86			CK73FB1H102K	CHIP C	1000PF	
C87			CE04LW1C100M	ELECTRO	10UF	
C89			CE04LW1C470M	ELECTRO	47UF	
C90			CE04LW1H2R2M	ELECTRO	2.2UF	
C91			CK73FB1H223K	CHIP C	0.022UF	
C92			CK73FSL1H471J	CHIP C	470PF	
C93			CK73FB1H103K	CHIP C	0.010UF	

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C96			CK73FB1H102K	CHIP C	1000PF	K
CN1			E40-4609-05	PIN ASSY		
CN2			E40-4871-05	PIN ASSY		
J1			E70-0052-05	LOCK TERMINAL BOARD		
CF1 ,2			L72-0536-05	CERAMIC FILTER		TEQ
CF1 ,2			L72-0596-05	CERAMIC FILTER		KPY
L31			L30-0943-05	FM IFT		
L32			L30-0944-05	FM IFT		
L33			L30-0911-05	AM IFT		
L34			L79-1240-05	LC FILTER		TEQ
L35 ,36			L79-1239-05	LC FILTER		
L61			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L62			L39-1351-05	COMBINATION COIL		
L63			L40-1001-17	SMALL FIXED INDUCTOR(10UH,K)		
L81			L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
X31			L78-0637-05	RESONATOR (456KHZ)		
X81			L77-2159-05	CRYSTAL RESONATOR(7.2MHZ)		
R1			RD14NB2E22J	RD	220	J 1/4W
R2			RK73FB2A221J	CHIP R	220	J 1/10W
R3			RK73FB2A182J	CHIP R	1.8K	J 1/10W
R3			RK73FB2A561J	CHIP R	560	J 1/10W
R4			RK73FB2A222J	CHIP R	2.2K	J 1/10W
R5			RK73FB2A103J	CHIP R	10K	J 1/10W
R7			RK73FB2A221J	CHIP R	220	J 1/10W
R8			RK73FB2A681J	CHIP R	680	J 1/10W
R9			RK73FB2A470J	CHIP R	47	J 1/10W
R10			RK73FB2A101J	CHIP R	100	J 1/10W
R11			RK73FB2A331J	CHIP R	330	J 1/10W
R12			RK73FB2A101J	CHIP R	100	J 1/10W
R13			RK73FB2A681J	CHIP R	680	J 1/10W
R14			RK73FB2A332J	CHIP R	3.3K	J 1/10W
R15			RK73FB2A331J	CHIP R	330	J 1/10W
R16			RK73FB2A100J	CHIP R	10	J 1/10W
R16			RK73FB2A150J	CHIP R	15	J 1/10W
R17			RK73FB2A331J	CHIP R	330	J 1/10W
R18			RK73FB2A391J	CHIP R	390	J 1/10W
R19			RK73FB2A681J	CHIP R	680	J 1/10W
R20			RK73FB2A100J	CHIP R	10	J 1/10W
R20			RK73FB2A150J	CHIP R	15	J 1/10W
R21			RK73FB2A101J	CHIP R	100	J 1/10W
R31			RS14KB3A151JFR	FL-PROOF RS	150	J 1W
R32			RK73EB2B432J	CHIP R	4.3K	J 1/8W
R33			RK73FB2A302J	CHIP R	3.0K	J 1/10W
R34			RK73FB2A822J	CHIP R	8.2K	J 1/10W
R35			RK73FB2A333J	CHIP R	33K	J 1/10W
R36			RK73FB2A393J	CHIP R	39K	J 1/10W
R37			RK73FB2A332J	CHIP R	3.3K	J 1/10W
R38			RK73FB2A333J	CHIP R	33K	J 1/10W
R39			RK73FB2A823J	CHIP R	82K	J 1/10W
R40			RK73FB2A202J	CHIP R	2.0K	J 1/10W
R41			RK73FB2A222J	CHIP R	2.2K	J 1/10W
R42			RK73FB2A202J	CHIP R	2.0K	J 1/10W

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IC2			LC72131	MOS-IC		
Q1_2			2SC4081(R,S)	TRANSISTOR		
Q1_2			2SC4116(Y,GR)	TRANSISTOR		
Q3			2SA1576A(R,S)	TRANSISTOR		
Q3			2SA1586(Y,GR)	TRANSISTOR		
Q4			2SC4081(R,S)	TRANSISTOR		
Q4			2SC4116(Y,GR)	TRANSISTOR		
Q31_34			2SC4081(R,S)	TRANSISTOR		
Q31_34			2SC4116(Y,GR)	TRANSISTOR		
Q81			2SA1576A(R,S)	TRANSISTOR		
Q81			2SA1586(Y,GR)	TRANSISTOR		
Q101_102			2SD1757K	TRANSISTOR		
Q103			2SA1576A(R,S)	TRANSISTOR		
Q103			2SA1586(Y,GR)	TRANSISTOR		
A1			W02-2582-05	FM FRONT-END ASSY	KPY	
A1			W02-2584-05	FM FRONT-END ASSY	TE	
A1			W02-2586-05	FM FRONT-END ASSY	Q	
POWER AMPLIFIER UNIT (X07-290X-XX)						
C1_8		*	CK45FB1H332KMM	CERAMIC		
C9_12		*	CK45FF1H103ZMM	CERAMIC		
C13_14			CE04KW2A2R2M	ELECTRO	K	
C17_18			CE04KW2A2R2M	ELECTRO	Z	
C21_22			CE04KW2A2R2M	ELECTRO	100WV	
C25_26			CE04KW2A2R2M	ELECTRO	100WV	
C29_36			CF92FV1H224J	MYLAR	J	
C37_42			CQ93FMG1H472J	MYLAR	J	
C43_44		*	CK45FB1H332KMM	CERAMIC	J	
C45		*	CK45FF1H103ZMM	CERAMIC	K	
C46_49			CE04KW2A2R2M	ELECTRO	Z	
C50_51			CF92FV1H224J	MYLAR	100WV	
C52_58			CQ93FMG1H102J	MYLAR	J	
C59			CQ93FMG1H472J	MYLAR	J	
C60			CE04KW1H100M	ELECTRO	10UF	
C61			CE04KW1A101M	ELECTRO	50WV	
C62			CE04KW1A101M	ELECTRO	10WV	
C63			CE04KW1V220M	ELECTRO	6.3WV	
C64			CE04KW1V470M	ELECTRO	35WV	
C65			CE04KW1H3R3M	ELECTRO	47UF	
C66_67		*	C90-3600-05	ELECTRO	3.3UF	
C68_73		*	CK45FE2H103PMM	CERAMIC	15000UF	
C74			CQ93FMG1H102J	MYLAR	0.010UF	
C80			CE04KW1A470M	ELECTRO	1000PF	
C81			CE04KW1A221M	ELECTRO	J	
C82			CE04DW1E331M	ELECTRO	10WV	
C83			CE04KW1V4R7M	ELECTRO	330UF	
C84			CK45FF1H103ZMM	CERAMIC	4.7UF	
C85			C91-1444-05	MF	25WV	
C86			C91-1488-05	MF	0.010UF	
C88		*	CK45FF1H103ZMM	CERAMIC	Z	
CN5			E40-4245-05	PIN ASSY	250VAC	
CN6			E40-4294-05	FLAT CABLE CONNECTOR	250VAC	
CN7			E40-4808-05	PIN ASSY	6800PF	
CN8			E40-4293-05	FLAT CABLE CONNECTOR	0.010UF	
CN11			E40-3247-05	PIN ASSY	0.010UF	

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R43_44			RK73FB2A222J	CHIP R	J	1/10W
R45_46			RK73FB2A102J	CHIP R	J	1/10W
R47_48			RK73FB2A392J	CHIP R	J	1/10W
R49			RK73FB2A473J	CHIP R	J	1/10W
R51			RK73FB2A392J	CHIP R	J	1/10W
R52			RK73FB2A104J	CHIP R	J	1/10W
R53			RK73FB2A102J	CHIP R	J	1/10W
R55			RK73FB2A562J	CHIP R	J	1/10W
R56_57			RK73FB2A101J	CHIP R	J	1/10W
R59			RK73FB2A272J	CHIP R	J	1/10W
R67			RK73FB2A104J	CHIP R	J	1/10W
R69			RK73FB2A103J	CHIP R	J	1/10W
R80			RK73FB2A102J	CHIP R	J	1/8W
R81_83			RK73FB2A102J	CHIP R	J	1/10W
R84			RK73FB2A103J	CHIP R	J	1/10W
R85_88			RK73FB2A102J	CHIP R	J	1/10W
R89			RD14NB2E101J	RD	J	1/4W
R90			RK73FB2A562J	CHIP R	J	1/10W
R91			RK73FB2A222J	CHIP R	J	1/10W
R92			RK73FB2A123J	CHIP R	J	1/10W
R93			RK73FB2A122J	CHIP R	J	1/10W
R94			RD14NB2E561J	RD	J	1/4W
R101_102			RK73FB2A102J	CHIP R	J	1/10W
R103			RK73FB2A821J	CHIP R	J	1/10W
R104			RK73FB2A473J	CHIP R	J	1/10W
R105			RK73FB2A822J	CHIP R	J	1/10W
W51_55			R92-0670-05	CHIP R		
W57_58			R92-0679-05	CHIP R		
W59			R92-0670-05	CHIP R		
W61			R92-0670-05	CHIP R		
W62_64			R92-0679-05	CHIP R		
W66_67			R92-0679-05	CHIP R		
W71			R92-0670-05	CHIP R		
W72			R92-0670-05	CHIP R		
W75			R92-0670-05	CHIP R		
W81			R92-0679-05	CHIP R		
W83			R92-0679-05	CHIP R		
W85			R92-0670-05	CHIP R		
S1			S62-0034-05	SLIDE SWITCH		
D1_2			HSS104	DIODE		
D1_2			1SS133	DIODE		
D31			HZS8.2N(B2)	ZENER DIODE		
D31			RD8.2ES(B2)	ZENER DIODE		
D32			HSS104	DIODE		
D32			1SS133	DIODE		
D61_62			HSS104	DIODE		
D61_62			1SS133	DIODE		
D81			HZS5.1N(B2)	ZENER DIODE		
D81			RD5.1ES(B2)	ZENER DIODE		
D101			HZS3.3N(B2)	ZENER DIODE		
D101			RD3.3ES(B2)	ZENER DIODE		
D102			HZS2.7N(B2)	ZENER DIODE		
D102			RD2.7ES(B2)	ZENER DIODE		
IC1			LA1836	ANALOGUE IC		

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
D29			RD1ES(B2)	ZENER DIODE		
D30			HZS15N(B2)	ZENER DIODE		
D31			RD1ES(B2)	ZENER DIODE		
D31			HSS104A	DIODE		
D31			1SS131	DIODE		
D32, 33			D5FB20-4002-L2	DIODE		
D34			HZS6.2N(B2)	ZENER DIODE		
D34			RD6.2ES(B2)	ZENER DIODE		
D35-37			HSS104A	DIODE		
D35-37			1SS131	DIODE		
D38-41			S5688B	DIODE		
D38-41			1SR139-400	DIODE		
D42			HZS2.7N(B2)	ZENER DIODE		
D42			RD2.7ES(B2)	ZENER DIODE		
D43			HSS104A	DIODE		
D43			1SS131	DIODE		
D44			HZS5.1S(B2)	ZENER DIODE		
D44			RD5.1JS(B2)	ZENER DIODE		
D45-47			HSS104A	DIODE		
D45-47			1SS131	DIODE		
Q1-4			TRAITR4N*5	TRANSISTOR		
Q5-8			TRAITR4P*5	TRANSISTOR		
Q9-12			2SC2631(R,S)	TRANSISTOR		
Q13-16			2SA992(F,E)	TRANSISTOR		
Q17			TRAITR4N*5	TRANSISTOR		
Q18			TRAITR4P*5	TRANSISTOR		
Q19			2SC2631(R,S)	TRANSISTOR		
Q20, 21			2SA992(F,E)	TRANSISTOR		
Q22, 23			2SC1845(F,E)	TRANSISTOR		
Q24			2SD2012	TRANSISTOR		
Q24			2SD2061(E,F)	TRANSISTOR		
Q25			UN4216	DIGITAL TRANSISTOR		
Q26, 27			DTC113ZSA	DIGITAL TRANSISTOR		
Q26, 27			UN4219	DIGITAL TRANSISTOR		
Q28			DTC124ESA	DIGITAL TRANSISTOR		
Q28			UN4212	DIGITAL TRANSISTOR		
Q29-33			DTC113ZSA	DIGITAL TRANSISTOR		
Q29-33			UN4219	DIGITAL TRANSISTOR		
Q34			2SC2003(L,K)	TRANSISTOR		
Q35			2SC3940A(R,S)	TRANSISTOR		
Q35			2SD863(E,F)	TRANSISTOR		
Q36			DTC124ESA	DIGITAL TRANSISTOR		
Q36			UN4212	DIGITAL TRANSISTOR		
Q37			DTC143TSA	DIGITAL TRANSISTOR		
Q37			UN4216	DIGITAL TRANSISTOR		
Q38			DTC124ESA	DIGITAL TRANSISTOR		
Q38			UN4212	DIGITAL TRANSISTOR		
SURROUND UNIT (X08-273X-XX)						
C1, 2			CC73FSL1H821J	CHIP C		
C3, 4			CC73FSL1H181J	CHIP C		
C5, 6			CC93FMG1H332J	MYLAR		
C7, 8			CE04KW1E470M	ELECTRO		
C9, 10			CC73FSL1H101J	CHIP C		

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Δ CN14			E40-3385-05	PIN ASSY	MCTEQ	
Δ CN15-19			E40-4871-05	PIN ASSY	KPY	
Δ J1			E03-0148-05	AC OUTLET	EQM	
Δ J1			E03-0149-05	AC OUTLET	T	
Δ J1			E03-0310-05	AC OUTLET	C	
Δ J1			E03-0330-05	AC OUTLET		
Δ J2			E70-0055-05	SCREW TERMINAL BOARD	CTEQ	
Δ J3			E70-0049-05	SCREW TERMINAL BOARD	KP	
Δ P2			E29-1625-04	LEAD PLATE	MY	
Δ F1			F05-3121-05	FUSE (SEMKO) (250V T3.15AL)	E	
Δ F1			F05-0078-05	FUSE (SEMKO)		
Δ F3			F05-3121-05	FUSE (SEMKO) (250V T3.15AL)		
Δ F3			F05-2525-05	FUSE (SEMKO) (250V T2.5AL)		
Δ CN1, 2			J61-0098-05	WIRE BAND	MY	
Δ CN3, 4			J13-0075-05	FUSE CLIP	E	
Δ CN9, 10			J13-0075-05	FUSE CLIP		
Δ E7-9			J11-0808-05	WIRE CLAMPER		
Δ L1-5			L39-0085-05	PHASE COMPENSATION COIL	KP	
Δ T1			L07-0864-05	POWER TRANSFORMER	YMY	
Δ T1			L07-0865-05	POWER TRANSFORMER	TE	
Δ T1			L07-0867-05	POWER TRANSFORMER	CQ	
Δ T1			L07-2114-05	POWER TRANSFORMER		
R1-4			RD14NB2E151J	RD	J	1/4W
R5-12			RD14NB2E470J	RD	J	1/4W
R13-20			RD14NB2E101J	RD	J	1/4W
R21-28			RD14NB2E332J	RD	J	1/4W
R49-52			RS14KB3A2R7JFR	FL-PROOF RS	J	1W
R53-56			RD14NB2E220J	RD	J	1/4W
R57			RD14NB2E151J	RD	J	1/4W
R58, 59			RD14NB2E470J	RD	J	1/4W
R60, 61			RD14NB2E101J	RD	J	1/4W
R62, 63			RD14NB2E332J	RD	J	1/4W
R69			RS14KB3A2R7JFR	FL-PROOF RS	J	1W
R70			RD14NB2E220J	RD	J	1/4W
Δ R71, 72			RD14NB2E391J	RD	J	1/4W
Δ R73			RS14KB3A181JFR	FL-PROOF RS	J	1W
Δ R74			RD14NB2E102J	RD	J	1/4W
Δ R84, 85			RD14NB2E102J	RD	J	1/4W
Δ R88			RS14KB3A471JFR	FL-PROOF RS	J	1W
Δ R93			R92-1844-05	CARBON	J	12W
Δ R100, 101			RD14NB2E3R9J	RD	J	1/4W
Δ VR1-5			R12-0605-05	TRIMMING POT (220 76)		
Δ K1			S76-0065-05	MAGNETIC RELAY	KP	
Δ K1			S76-0070-05	MAGNETIC RELAY	MYCTEQ	
Δ K2-5			S76-0061-05	MAGNETIC RELAY		
Δ K6			S76-0063-05	MAGNETIC RELAY		
Δ K7			S76-0028-05	MAGNETIC RELAY		
Δ S2			S31-3010-05	SLIDE SWITCH	MY	
Δ TS1			S59-1080-05	THERMAL SWITCH		
Δ TS2			S79-0020-05	THERMAL SWITCH		
Δ D1-28			HSS104A	DIODE		
Δ D1-28			1SS131	DIODE		
Δ D29			HZS11N(B2)	ZENER DIODE		

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Ref. No	Add-ress	New Parts	Parts No.	Description	Re- marks
C107, 108			CC73FCH1H220J	22PF	
C109			CC93FMG1H562J	5600PF	J
C110-112			CE04KW1E470M	47UF	J
C113, 114			CC73FCH1H220J	22PF	25WV
C115			CC93FMG1H562J	5600PF	J
C116			CE04KW1H220M	22UF	50WV
C117, 118			CC73FSL1H121J	120PF	J
C119, 120			CE04KW1E470M	47UF	25WV
C121			CC73FSL1H121J	120PF	K
C122, 123			CC73FSL1H103K	0.010UF	K
C124			CC73FSL1H102K	1000PF	K
C125			CF92FV1H564J	0.56UF	J
C126			CC73FSL1H104K	0.10UF	K
C156			CE04KW1H220M	22UF	50WV
C157			CC73FSL1H103K	0.010UF	K
C158			CC73FSL1H102K	1000PF	K
C159, 160			CE04KW1E470M	47UF	25WV
C161			CC73FSL1H103K	0.010UF	K
C162			CC73FSL1H102K	1000PF	K
C163, 164			CC73FSL1H101J	100PF	J
C165, 166			CE04KW1H100M	10UF	50WV
C167, 168			CC73FSL1H821J	820PF	J
C169			CE04KW1H220M	22UF	50WV
C170			CC73FSL1H102K	1000PF	K
C171, 172			CC73FSL1H821J	820PF	J
C173, 174			CC73FSL1H221J	220PF	J
C181			CC73FSL1H103K	0.010UF	K
C182			CC73FSL1H102K	1000PF	K
C183			CE04KW1H47M	47UF	50WV
C184			CC73FSL1H101J	100PF	J
C185			CC73FSL1H103K	0.010UF	K
C186			CC73FSL1H102K	1000PF	K
C187			CC73FSL1H103K	0.010UF	K
C188			CC73FSL1H102K	1000PF	K
C189			CC73FSL1H103K	0.010UF	K
C190			CC73FSL1H102K	1000PF	K
C301			CE04KW1A101M	100UF	10WV
C302			CE04KW1E470M	47UF	25WV
C303, 304			CC73FSL1H102K	1000PF	K
C305, 306			CE04KW1A101M	100UF	10WV
C307, 308			CC73FSL1H102K	1000PF	K
C309			CE04KW1A101M	100UF	10WV
C310			CC73FSL1H102K	1000PF	K
C311			CE04KW1A101M	100UF	10WV
C312			CC73FSL1H104K	0.10UF	K
C313			CC73FCH1H102J	1000PF	J
C314			CC73FSL1H822K	8200PF	K
C315			CC73FCH1H070D	7.0PF	D
C316			CC73FCH1H090D	9.0PF	D
C317			CC73FSL1E104K	0.10UF	K
C318			CC73FSL1H102K	1000PF	K
C319			CC73FSL1H221J	220PF	J
C320			CC73FCH1H090D	9.0PF	D
C321			CC73FSL1H102K	1000PF	K
C322			CC73FCH1H070D	7.0PF	D

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C11, 12			CC93FMG1H152J	1500PF	J
C13			CC73FSL1H103K	0.010UF	K
C14			CC73FSL1H102K	1000PF	K
C15, 16			CE04KW1H220M	22UF	50WV
C17			CC73FSL1H103K	0.010UF	K
C18			CC73FSL1H102K	1000PF	K
C19			CC73FSL1H101J	100PF	J
C21, 22			CC73FSL1H821J	820PF	J
C23			CC73FSL1H181J	180PF	J
C24			CC93FMG1H471J	470PF	J
C25			CC93FMG1H332J	3300PF	J
C26			CC93FMG1H473J	0.47UF	J
C27			CC93FMG1H152J	1500PF	J
C28			CC93FMG1H183J	0.018UF	J
C29			CC73FSL1H101J	100PF	J
C30			CC93FMG1H472J	4700PF	J
C31, 32			CE04KW1H220M	22UF	50WV
C33			CC73FSL1H103K	0.010UF	K
C34			CC73FSL1H102K	1000PF	K
C35			CC73FSL1H103K	0.010UF	K
C36			CC73FSL1H102K	1000PF	K
C37, 38			CE04KW1H100M	10UF	50WV
C39, 40			CC73FSL1H121J	120PF	J
C41, 42			CC73FSL1H821J	820PF	J
C43, 44			CC73FSL1H181J	180PF	J
C45, 46			CC93FMG1H332J	3300PF	J
C47, 48			CC73FSL1H101J	100PF	J
C49			CC73FSL1H103K	0.010UF	K
C50			CC73FSL1H102K	1000PF	K
C51, 52			CC93FMG1H152J	1500PF	J
C53			CC73FSL1H103K	0.010UF	K
C54			CC73FSL1H102K	1000PF	K
C55, 60			CE04KW1H100M	10UF	50WV
C61, 64			CF92FV1H224J	0.22UF	J
C65, 66			CC73FSL1H101J	100PF	J
C67, 68			CE04KW1H47M	47UF	50WV
C81, 84			CE92FV1H224J	0.22UF	J
C85, 86			CC73FSL1H101J	100PF	J
C87, 88			CE04KW1H47M	47UF	50WV
C89			CC73FSL1H103K	0.010UF	K
C90			CC73FSL1H102K	1000PF	K
C91			CC73FSL1H103K	0.010UF	K
C92			CF92FV1H224J	0.22UF	J
C93			CC73FSL1H102K	1000PF	K
C94			CF92FV1H224J	0.22UF	J
C95			CC73FSL1H101J	100PF	J
C96			CE04KW1H47M	47UF	50WV
C97			CC73FSL1H101J	100PF	J
C98			CC73FSL1H470J	47PF	J
C99			CF92FV1H564J	0.56UF	J
C100			CF92FV1H274J	0.27UF	J
C101, 102			CE04KW1H220M	22UF	50WV
C103, 104			CE04KW1E470M	47UF	25WV
C105			CF92FV1H274J	0.27UF	J
C106			CE04KW1E470M	47UF	25WV

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Ref. No	Add- ress	Parts No.	Description	Desti- nation	Re- marks
C543,544		CE04KW1H220M	ELECTRO		
C545		CK73FB1H102K	CHIP C	50WV	
C546		CK73FB1H103K	CHIP C	1000PF	
C547,548		CE04KW1H220M	ELECTRO	0.010UF	
C549,550		CK73FCH1H220J	CHIP C	22UF	
C551		CK73FB1H102K	CHIP C	22PF	
C552		CK73FB1H103K	CHIP C	1000PF	
C553,554		CE04KW1H0R1M	ELECTRO	0.010UF	
C555,556		CK73FB1H152K	CHIP C	0.1UF	
C559,560		CK73FCH1H220J	CHIP C	1500PF	
C563		CK73FB1H102K	CHIP C	22PF	
C564		CK73FB1H103K	CHIP C	1000PF	
C565-568		CE04KW1H4R7M	ELECTRO	0.010UF	
C569,570		CK73FSL1H151J	CHIP C	4.7UF	
C571,572		CK73FSL1H101J	CHIP C	150PF	
C573,574		CE04KW1H220M	ELECTRO	100PF	
C575		CK73FB1H102K	CHIP C	22UF	
C576		CK73FB1H103K	CHIP C	1000PF	
C577,578		CE04KW1H220M	ELECTRO	0.010UF	
C579,580		CK73FCH1H220J	CHIP C	22PF	
C581		CK73FB1H102K	CHIP C	1000PF	
C582		CK73FB1H103K	CHIP C	1000PF	
C587,588		CE04KW1H4R7M	ELECTRO	4.7UF	
C589,590		CK73FCH1H220J	CHIP C	22PF	
C593		CK73FB1H102K	CHIP C	1000PF	
C594		CK73FB1H103K	CHIP C	1000PF	
C595-598		CE04KW1H4R7M	ELECTRO	0.010UF	
C599,600		CK73FSL1H151J	CHIP C	4.7UF	
C601,602		CK73FSL1H101J	CHIP C	150PF	
C603,604		CE04KW1H220M	ELECTRO	22UF	
C605		CK73FB1H102K	CHIP C	1000PF	
C606		CK73FB1H103K	CHIP C	1000PF	
C607,608		CE04KW1H220M	ELECTRO	0.010UF	
C609,610		CK73FCH1H220J	CHIP C	22PF	
C611		CK73FB1H102K	CHIP C	1000PF	
C612		CK73FB1H103K	CHIP C	1000PF	
C619,620		CK73FCH1H220J	CHIP C	0.010UF	
C701-712		CK73FSL1H101J	CHIP C	22PF	
C713		CK73FB1H102K	CHIP C	1000PF	
C714		CK73FB1H103K	CHIP C	1000PF	
C715		CK73FB1H102K	CHIP C	1000PF	
C716		CK73FB1H103K	CHIP C	1000PF	
C717,718		CK73FSL1H470J	CHIP C	47PF	
C801-812		CK73FCH1H100D	CHIP C	10PF	
C813		CK73EB1H104K	CHIP C	0.10UF	
C814		CE04KW1H4R7M	ELECTRO	4.7UF	
C815		CK73EB1H104K	CHIP C	0.10UF	
C816		CE04KW1H010M	ELECTRO	1.0UF	
C817		CK73EB1H104K	CHIP C	0.10UF	
C818		CE04KW1H4R7M	ELECTRO	4.7UF	
C901-903		CK73FB1H102K	CHIP C	1000PF	
C904		CK73FSL1H221J	CHIP C	220PF	
CN1,2		E40-9836-05	SOCKET FOR PIN ASSY		
CN51,52		E40-9836-05	SOCKET FOR PIN ASSY		

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C323-325		CK73FCH1H220J	CHIP C	J	
C327		CK73FCH1H090D	CHIP C	D	
C328		CK73FCH1H070D	CHIP C	D	
C329		CK73FB1H102K	CHIP C	1000PF	
C330		CK73FB1E104K	CHIP C	0.10UF	
C331		CK73FCH1H090D	CHIP C	9.0PF	
C332		CK73FCH1H070D	CHIP C	7.0PF	
C333		CK73FB1H222K	CHIP C	8200PF	
C334		CK73FB1H103K	CHIP C	0.010UF	
C335		CK73FB1E104K	CHIP C	0.10UF	
C336		CK73FB1H103K	CHIP C	0.010UF	
C337		CK73FSL1H101J	CHIP C	1000PF	
C338,339		CK73FB1H102K	CHIP C	1000PF	
C340		CE04KW1A101M	ELECTRO	10WV	
C341		CK73FB1H102K	CHIP C	1000PF	
C342		CE04KW1E470M	ELECTRO	47UF	
C343		CK73FB1E104K	CHIP C	0.10UF	
C344		CK73FB1H103K	CHIP C	0.010UF	
C345		CK73FB1H102K	CHIP C	1000PF	
C347,348		CK73FB1H102K	CHIP C	1000PF	
C349		CK73FCH1H220J	CHIP C	22PF	
C361-363		CK73FB1E104K	CHIP C	0.10UF	
C364,365		CK73FSL1H101J	CHIP C	1000PF	
C366		CE04KW1E470M	ELECTRO	47UF	
C367		CK73FCH1H220J	CHIP C	0.22UF	
C368,369		CK73FB1H102K	CHIP C	1000PF	
C370		CK73FCH1H220J	CHIP C	22PF	
C371,372		CK73FSL1H470J	CHIP C	47PF	
C373		CK73FB1H102K	CHIP C	1000PF	
C374		CE04KW1E470M	ELECTRO	47UF	
C401,402		CK73FB1E104K	CHIP C	0.10UF	
C403		CK73FB1H103K	CHIP C	0.010UF	
C404		CK73FB1H102K	CHIP C	1000PF	
C405,406		CK73FB1E104K	CHIP C	0.10UF	
C407		CK73FB1H102K	CHIP C	1000PF	
C501,502		CE04KW1H100M	ELECTRO	10UF	
C503		CK73FB1H102K	CHIP C	1000PF	
C504		CK73FB1H103K	CHIP C	0.010UF	
C505,506		CE04KW1H4R7M	ELECTRO	0.010UF	
C509,510		CK73FSL1H151J	CHIP C	150PF	
C511,512		CK73FSL1H101J	CHIP C	100PF	
C513,514		CE04KW1H220M	ELECTRO	22UF	
C515		CK73FB1H102K	CHIP C	1000PF	
C516		CK73FB1H103K	CHIP C	1000PF	
C517,518		CE04KW1H220M	ELECTRO	22UF	
C519,520		CK73FCH1H220J	CHIP C	22PF	
C521		CK73FB1H102K	CHIP C	1000PF	
C522		CK73FB1H103K	CHIP C	0.010UF	
C525-528		CE04KW1H4R7M	ELECTRO	4.7UF	
C529,530		CK73FCH1H220J	CHIP C	22PF	
C533		CK73FB1H102K	CHIP C	1000PF	
C534		CK73FB1H103K	CHIP C	0.010UF	
C535-538		CE04KW1H4R7M	ELECTRO	4.7UF	
C539,540		CK73FSL1H151J	CHIP C	150PF	
C541,542		CK73FSL1H101J	CHIP C	100PF	

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PARTS LIST

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
J1			E11-0200-05	MINIATURE PHONE JACK(5P)	JP	
J2			E11-0344-05	MINIATURE PHONE JACK	JP	
J3			E63-0174-05	PHONO JACK	JP	
J71, 72			E63-0139-15	PHONO JACK		
J73-75			E11-0283-05	MINIATURE PHONE JACK(3P)	JP	
L1 -7			L92-0044-05	FERRITE CORE		
X1			L78-0294-05	RESONATOR (10.000M)		
X2			L77-2194-05	CRYSTAL RESONATOR(5.0M)		
X3			L77-2192-05	CRYSTAL RESONATOR(12.288M)		
R1 2			RK73FB2A103J	CHIP R	J	1/10W
R3 4			RK73FB2A512J	CHIP R	J	1/10W
R5 6			RK73FB2A912J	CHIP R	J	1/10W
R7 8			RK73FB2A103J	CHIP R	J	1/10W
R13, 14			RK73FB2A512J	CHIP R	J	1/10W
R15, 16			RK73FB2A104J	CHIP R	J	1/10W
R17, 18			RK73FB2A473J	CHIP R	J	1/10W
R19, 20			RK73FB2A104J	CHIP R	J	1/10W
R21, 22			RK73FB2A103J	CHIP R	J	1/10W
R23			RK73FB2A512J	CHIP R	J	1/10W
R24			RK73FB2A822J	CHIP R	J	1/10W
R25			RK73FB2A912J	CHIP R	J	1/10W
R26			RK73FB2A182J	CHIP R	J	1/10W
R27 -29			RK73FB2A103J	CHIP R	J	1/10W
R30			RK73FB2A104J	CHIP R	J	1/10W
R31			RK73FB2A103J	CHIP R	J	1/10W
R32			RK73FB2A100J	CHIP R	J	1/10W
R33			RK73FB2A512J	CHIP R	J	1/10W
R34			RK73FB2A182J	CHIP R	J	1/10W
R35, 36			RK73FB2A104J	CHIP R	J	1/10W
R37 -40			RK73FB2A471J	CHIP R	J	1/10W
R41, 42			RK73FB2A103J	CHIP R	J	1/10W
R43, 44			RK73FB2A512J	CHIP R	J	1/10W
R45, 46			RK73FB2A912J	CHIP R	J	1/10W
R47, 48			RK73FB2A103J	CHIP R	J	1/10W
R49, 50			RK73FB2A471J	CHIP R	J	1/10W
R51			RK73FB2A103J	CHIP R	J	1/10W
R52			RK73FB2A104J	CHIP R	J	1/10W
R53, 54			RK73FB2A512J	CHIP R	J	1/10W
R55, 56			RK73FB2A104J	CHIP R	J	1/10W
R57 -59			RK73FB2A203J	CHIP R	J	1/10W
R61, 62			RK73FB2A104J	CHIP R	J	1/10W
R63, 64			RK73FB2A133J	CHIP R	J	1/10W
R65, 66			RK73FB2A622J	CHIP R	J	1/10W
R67, 68			RK73FB2A104J	CHIP R	J	1/10W
R81, 82			RK73FB2A104J	CHIP R	J	1/10W
R83, 84			RK73FB2A133J	CHIP R	J	1/10W
R85, 86			RK73FB2A622J	CHIP R	J	1/10W
R87, 88			RK73FB2A104J	CHIP R	J	1/10W
R89, 90			RK73FB2A203J	CHIP R	J	1/10W
R91			RK73FB2A104J	CHIP R	J	1/10W
R92			RK73FB2A622J	CHIP R	J	1/10W
R93			RK73FB2A133J	CHIP R	J	1/10W
R94, 95			RK73FB2A104J	CHIP R	J	1/10W
R96, 97			RK73FB2A203J	CHIP R	J	1/10W

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
R98, 99			RK73FB2A512J	CHIP R	J	1/10W
R111, 112			RK73FB2A104J	CHIP R	J	1/10W
R113, 114			RK73FB2A123J	CHIP R	J	1/10W
R115, 116			RK73FB2A203J	CHIP R	J	1/10W
R117, 118			RK73FB2A104J	CHIP R	J	1/10W
R119, 120			RK73FB2A103J	CHIP R	J	1/10W
R121, 122			RK73FB2A222J	CHIP R	J	1/10W
R123, 124			RK73FB2A123J	CHIP R	J	1/10W
R125-128			RK73FB2A222J	CHIP R	J	1/10W
R129, 130			RK73FB2A103J	CHIP R	J	1/10W
R131-135			RK73FB2A104J	CHIP R	J	1/10W
R136			RK73FB2A103J	CHIP R	J	1/10W
R137, 138			RK73FB2A512J	CHIP R	J	1/10W
R151, 152			RK73FB2A104J	CHIP R	J	1/10W
R153, 154			RK73FB2A222J	CHIP R	J	1/10W
R155, 156			RK73FB2A123J	CHIP R	J	1/10W
R157, 158			RK73FB2A203J	CHIP R	J	1/10W
R159, 160			RK73FB2A123J	CHIP R	J	1/10W
R161-164			RK73FB2A472J	CHIP R	J	1/10W
R165, 166			RK73FB2A331J	CHIP R	J	1/10W
R300			RK73FB2A101J	CHIP R	J	1/10W
R301			RK73FB2A105J	CHIP R	J	1/10W
R303			RK73FB2A100J	CHIP R	J	1/10W
R304-307			RK73FB2A101J	CHIP R	J	1/10W
R308			RK73FB2A104J	CHIP R	J	1/10W
R309-313			RK73FB2A101J	CHIP R	J	1/10W
R314-316			RK73FB2A102J	CHIP R	J	1/10W
R317-319			RK73FB2A101J	CHIP R	J	1/10W
R320			RK73FB2A473J	CHIP R	J	1/10W
R321-323			RK73FB2A101J	CHIP R	J	1/10W
R324			RK73FB2A102J	CHIP R	J	1/10W
R325-328			RK73FB2A101J	CHIP R	J	1/10W
R329			RK73FB2A104J	CHIP R	J	1/10W
R330			RK73FB2A101J	CHIP R	J	1/10W
R331			RK73FB2A104J	CHIP R	J	1/10W
R332			RK73FB2A105J	CHIP R	J	1/10W
R333			RK73FB2A104J	CHIP R	J	1/10W
R334, 335			RK73FB2A101J	CHIP R	J	1/10W
R336-345			RK73FB2A104J	CHIP R	J	1/10W
R346, 347			RK73FB2A101J	CHIP R	J	1/10W
R348			RK73FB2A104J	CHIP R	J	1/10W
R349, 350			RK73FB2A101J	CHIP R	J	1/10W
R351-376			RK73FB2A104J	CHIP R	J	1/10W
R377-379			RK73FB2A101J	CHIP R	J	1/10W
R380-382			RK73FB2A104J	CHIP R	J	1/10W
R384, 385			RK73FB2A750J	CHIP R	J	1/10W
R387-398			RK73FB2A104J	CHIP R	J	1/10W
R399			RK73FB2A750J	CHIP R	J	1/10W
R400-402			RD14NB2A471J	RD	J	1/4W
R403			RK73FB2A102J	CHIP R	J	1/10W
R404			RD14NB2A470J	RD	J	1/4W
R405			RK73FB2A102J	CHIP R	J	1/10W
R406-408			RK73FB2A102J	CHIP R	J	1/10W
R409			RK73FB2A101J	CHIP R	J	1/10W
R410-413			RK73FB2A223J	CHIP R	J	1/10W

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R705,706			RK73FB2A102J	CHIP R		
R707,708			RK73FB2A224J	CHIP R	1/10W	
R709,710			RK73FB2A221J	CHIP R	220K	
R711,712			RK73FB2A104J	CHIP R	100K	
R713,714			RK73FB2A102J	CHIP R	100K	
R717,718			RK73FB2A104J	CHIP R	100K	
R719,720			RK73FB2A102J	CHIP R	100K	
R721,722			RK73FB2A102J	CHIP R	100K	
R723,724			RK73FB2A104J	CHIP R	100K	
R725,728			RK73FB2A103J	CHIP R	10K	
R801-814			RK73FB2A473J	CHIP R	47K	
R815			RK73FB2A562J	CHIP R	56K	
R816,817			RK73FB2A473J	CHIP R	47K	
R818			RK73FB2A562J	CHIP R	56K	
R819,820			RK73FB2A473J	CHIP R	47K	
R821			RK73FB2A562J	CHIP R	56K	
R902			RK73FB2A913J	CHIP R	91K	
R903			RK73FB2A223J	CHIP R	22K	
R904-906			RD14NB2E471J	RD	470	
D1-2			DA204K	DIODE		
D3-5			MA110	DIODE		
D6			DA204K	DIODE		
D41			DA204K	DIODE		
D501			DA204K	DIODE		
D502-504			MA110	DIODE		
D701			DA204K	DIODE		
D702,703			MA110	DIODE		
D704			MA110	DIODE		
D801-803			UDZ18B	ZENER DIODE		
IC1-16			NJM4580E	ANALOGUE IC		
IC1-16			NJM4580ED	ANALOGUE IC		
IC17			TC9163AF	MOS-IC		
IC18			TC9162AF	MOS-IC		
IC19,20			TC7W00FU	MOS-IC		
IC31			TAT7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC31			UPC7805AHF	ANALOGUE IC		
IC32			UPD78016FGC522	ML-COM IC		
IC33			DSPE56009FJ81	MOS-IC		
IC34			CS4226-KQ	MOS-IC		
IC35			TC74HC04AF	IC(HEX INVERTER SMD)		
IC36			LH64286CK-70	MEMORY IC		
IC37,38			TAT7805S	IC(VOLTAGE REGULATOR/ +5V)		
IC37,38			UPC7805AHF	ANALOGUE IC		
IC39			TC74HC04AF	IC(HEX INVERTER SMD)		
IC51			TC9412AP	MOS-IC		
IC52,53			NJM4580E	ANALOGUE IC		
IC52,53			NJM4580ED	ANALOGUE IC		
IC54			TC9412AP	MOS-IC		
IC55,56			NJM4580E	ANALOGUE IC		
IC55,56			NJM4580ED	ANALOGUE IC		
IC57			TC9412AP	MOS-IC		
IC58,59			NJM4580E	ANALOGUE IC		
IC58,59			NJM4580ED	ANALOGUE IC		
IC60			TC9412AP	MOS-IC		

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R414			RK73FB2A102J	CHIP R		
R501,502			RK73FB2A104J	CHIP R	1/10W	
R503,504			RK73FB2A105J	CHIP R	100K	
R505,506			RK73FB2A104J	CHIP R	100K	
R507,508			RK73FB2A102J	CHIP R	100K	
R509,510			RK73FB2A224J	CHIP R	220K	
R511,514			RK73FB2A104J	CHIP R	100K	
R515,516			RK73FB2A222J	CHIP R	22K	
R517,518			RK73FB2A102J	CHIP R	10K	
R519,520			RK73FB2A133J	CHIP R	13K	
R521,522			RK73FB2A222J	CHIP R	22K	
R523,524			RK73FB2A272J	CHIP R	27K	
R525,526			RK73FB2A362J	CHIP R	36K	
R529,530			RK73FB2A244J	CHIP R	240K	
R531,532			RK73FB2A100J	CHIP R	10	
R533,534			RK73FB2A105J	CHIP R	10M	
R535,536			RK73FB2A184J	CHIP R	180K	
R537,538			RK73FB2A102J	CHIP R	10K	
R539,540			RK73FB2A241J	CHIP R	240	
R541-544			RK73FB2A104J	CHIP R	100K	
R545,546			RK73FB2A222J	CHIP R	22K	
R547,548			RK73FB2A102J	CHIP R	10K	
R549,550			RK73FB2A334J	CHIP R	330K	
R551,552			RK73FB2A822J	CHIP R	82K	
R553,554			RK73FB2A133J	CHIP R	13K	
R555,556			RK73FB2A272J	CHIP R	27K	
R555,556			RK73FB2A362J	CHIP R	36K	
R557,558			RK73FB2A222J	CHIP R	22K	
R559,560			RK73FB2A244J	CHIP R	240K	
R563,564			RK73FB2A105J	CHIP R	10M	
R565,566			RK73FB2A184J	CHIP R	180K	
R567,568			RK73FB2A241J	CHIP R	240	
R569,570			RK73FB2A104J	CHIP R	100K	
R571-574			RK73FB2A102J	CHIP R	22K	
R575,576			RK73FB2A222J	CHIP R	22K	
R577,578			RK73FB2A102J	CHIP R	10K	
R583,584			RK73FB2A133J	CHIP R	13K	
R585,586			RK73FB2A272J	CHIP R	27K	
R585,586			RK73FB2A362J	CHIP R	36K	
R587,588			RK73FB2A222J	CHIP R	22K	
R589,590			RK73FB2A244J	CHIP R	240K	
R593,594			RK73FB2A105J	CHIP R	10M	
R595,596			RK73FB2A184J	CHIP R	180K	
R597,598			RK73FB2A102J	CHIP R	10K	
R599,600			RK73FB2A241J	CHIP R	240	
R601-604			RK73FB2A104J	CHIP R	100K	
R605,606			RK73FB2A222J	CHIP R	22K	
R607,608			RK73FB2A102J	CHIP R	10K	
R613,614			RK73FB2A133J	CHIP R	13K	
R615,616			RK73FB2A272J	CHIP R	27K	
R615,616			RK73FB2A362J	CHIP R	36K	
R617,618			RK73FB2A222J	CHIP R	22K	
R619,620			RK73FB2A244J	CHIP R	240K	
R701,702			RK73FB2A221J	CHIP R	220	
R703,704			RK73FB2A224J	CHIP R	220K	

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C412,413 C415-417 C420 C421 C431		*	CK45FF1H103ZMM CK45FE2H103PMM CK45FE2H103PMM C91-1488-05 CK45FB1H471KMM	0.010UF Z 0.010UF P 0.010UF P 6800PF 250VAC 470PF K	MCYTEQ	
C432			CE04KW1H100M	ELECTRO 10UF 50WV		
CN101,102 CN103 CN104 CN105,106 CN107			E40-9853-05 E40-9849-05 E40-9847-05 E40-9853-05 E40-9849-05	PIN ASSY PIN ASSY PIN ASSY PIN ASSY PIN ASSY		
CN108 CN109 CN110 CN111 CN401		*	E40-9848-05 E40-9847-05 E40-9846-05 E40-4804-05 E40-4806-05	PIN ASSY PIN ASSY PIN ASSY SOCKET FOR PIN ASSY PIN ASSY		
CN402 CN403 J301			E40-4294-05 E40-4295-05 E11-0293-05	FLAT CABLE CONNECTOR FLAT CABLE CONNECTOR MINIATURE PHONE JACK(2P 5)		
F11 -13 F11 -13 F14 F14 F15,16 F15,16 F17 F17			F05-1222-05 F05-0067-05 F05-5016-05 F05-0066-05 F05-1623-05 F05-0068-05 F05-1222-05 F05-0067-05	FUSE (SEMKO) (250V T1.25A L) FUSE(5X20) FUSE (SEMKO) (250V T500MA) FUSE(5X20) FUSE (SEMKO) (250V T1.6AL) FUSE(5X20) FUSE (SEMKO) (250V T1.25A L) FUSE(5X20)	MYCTEQ KP MYCTEQ KP MYCTEQ KP MYCTEQ KP	
CN411-424 L101 L108 X1			J13-0075-05 L40-1021-14 L92-0044-05 L78-0267-05	FUSE CLIP SMALL FIXED INDUCTOR(1.0MH,K) FERRITE CORE RESONATOR (4.194MHZ)	KP	
CP1,2 CP3 CP4 CP5 CP6			R90-0803-05 R90-0500-05 R90-0855-05 R90-0851-05 R90-0482-05	MULTI-COMP 100KX7 J MULTI-COMP 100KX6 J MULTI-COMP 100KX5 J MULTI-COMP 100KX11 J MULTI-COMP 100KX4 J	1/4W 1/4W 1/4W 1/6W	
R207 R208 R211,212 R215,216 R231		*	RD14NB2E1R8J RD14NB2E2R7J RD14NB2E102J RD14NB2E21J RD14NB2E471J	1.8 J 2.7 J 1.0K J 220 J 470 J	1/4W 1/4W 1/4W 1/4W 1/4W	
R232 R233,234 R401 R402 R411,412			RD14NB2E681J RD14NB2E2R2J RD14NB2E4R7J RS14KB3A472JFR RD14NB2E102J	680 J 2.2 J 4.7 J FL-PROOF RS 1.0K J	1/4W 1/4W 1/4W 1W 1/4W	KP
R413 R414 R415			RD14NB2E6R8J RD14NB2E100J RD14NB2E681J	6.8 J 10 J 680 J	1/4W 1/4W 1/4W	
S1 D201,202			S40-1138-05 HZS15S(B)	PUSH SWITCH (POWER TYPE) ZENER DIODE	MCYTEQ	

Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
IC61,62 IC61,62 IC71,72 Q1 -3 Q1 -3 Q4,5 Q4,5 Q501-516 Q517 Q517 Q518 Q801-803 Q801-803 A1			NJM4580E NJM4580ED TC9163AF Q1-124EUA UN5212 DTA124EUA UN5112 2SC4213(B) DTC124EUA UN5212 2SB1308(Q,R) DTC113ZUA UN5219 W02-1181-05	ANALOGUE IC ANALOGUE IC MOS-IC DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR DIGITAL TRANSISTOR OPTIC RECEIVING MODULE	KP KP KP KP KP KP KP KP KP KP KP KP KP	
SUB CIRCUIT UNIT (X13-747X-XX)						
C203,204 C205,206 C207,208 C209 C221 C223 C224 C225 C226 C227 C228 C229 C231,232 C233,234 C235,236 C237,238 C239 C240,241 C242,243 C251,252 C253 C254,255 C256 C301 C302 C303 C304 C306 C307,308 C321 C322,323 C324 C351,352 C353 C401-405 C406 C407 C408 C409,410		*	CK45FB1H222KMM CE04KW1E470M CK45FF1H103ZMM CE04KW1V100M CE04KW1V100M CE04KW1A101M CF92FV1H104J CE04KW1E470M CE04KW1H100M CK45FF1H103ZMM CE04KW1H100M CE04KW1H103ZMM CE04KW1E470M CE04KW1E470M CF92FV1H104J CE04KW1E470M CF92FV1H333J CE04KW1H1010M CE04KW0J221M C90-1826-05 CK45FF1H103ZMM CE04KW1H1010M CE04KW1H103ZMM CK45FF1H103ZMM CK45FB1H102KMM CK45FF1H103ZMM CC45FSL1H221JN CK45FF1H103ZMM CE04KW1V102M CE04KW1J471M CE04KW1V471M CK45FF1H103ZMM CE04KW1C222M	2200PF K 470UF 25WV 0.010UF Z 10UF 35WV 10UF 35WV 100UF 10WV 0.10UF J 10UF 35WV 47UF 25WV 100UF 10WV 0.10UF J 47UF 25WV 10UF 50WV 0.010UF Z 0.010UF Z 0.10UF J 0.033UF J 1.0UF 50WV 220UF 6.3WV 0.047F 5.5WV 0.010UF Z 1.0UF 50WV 0.010UF Z 1000PF K 0.010UF J 220PF Z 0.010UF Z 1000UF 35WV 470UF 63WV 470UF 35WV 0.010UF Z 2200UF 16WV		

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KR-V999D/1090VR

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Ref. No	Add-ress	New Parts	Parts No.	Description	Desti-nation	Re-marks
Q211			2SD2061	TRANSISTOR		
Q212			2SB1370	TRANSISTOR		
Q213			DTC113ZSA	DIGITAL TRANSISTOR	KP	
Q214			UN4219	DIGITAL TRANSISTOR	KP	
Q214			DTC113ZSA	DIGITAL TRANSISTOR		
Q301			UN4219	DIGITAL TRANSISTOR		
Q301			2SC2458(Y,GR)	TRANSISTOR		
Q301			2SC3311A(Q,R)	TRANSISTOR		
DISPLAY UNIT (X14-430X-XX)						
D104-106				LED(RED)		
C1_2		*	B30-2509-05			
C3_4			C91-0745-05	CERAMIC	K	
C5_6			C91-0753-05	CHIP C	K	
C7_8			C90-3224-05	ELECTRO	16WV	
C9_10			C91-0729-05	CERAMIC	22PF	
C11_12			C90-3224-05	ELECTRO	4.7UF	
C13_14			CE04KW2A4R7M	ELECTRO	100WV	
C15_16		*	CC45FSL1H221JN	CERAMIC	220PF	
C17_18		*	CC45FSL1H220JN	CERAMIC	22PF	
C19_20		*	CC45FB1H561KMM	CERAMIC	560PF	
C21_22		*	CO93FMG1H563J	MYLAR	0.056UF	
C23_24			CE04KW1C100M	ELECTRO	10UF	
C25_26		*	CO93FMG1H393J	MYLAR	0.039UF	
C27_28		*	CE04KW2A4R7M	ELECTRO	4.7UF	
C33_34		*	CK45FB1H471KMM	CERAMIC	470PF	
C47_48			CO93FMG1H103J	MYLAR	0.010UF	
C55			CO93FMG1H103J	MYLAR	0.010UF	
C56			C91-0769-05	CERAMIC	0.010UF	
C57			C91-0745-05	CERAMIC	100PF	
C58_59			C91-0769-05	CERAMIC	0.010UF	
C101-103		*	C91-0745-05	CERAMIC	100PF	
C104-107			CC45FSL1H101JN	CHIP C	470PF	
C108-112			C91-0753-05	CHIP C	0.010UF	
C113		*	CK45FF1H103ZMM	CERAMIC	33UF	
C114		*	CK45FF1H103ZMM	CERAMIC	47PF	KPYTEQ
C115		*	CC45FCH1H220JN	CERAMIC	22PF	KPYTEQ
C116		*	CK45FF1H103ZMM	CERAMIC	5010UF	KPYTEQ
C117		*	CK45FB1H561KMM	CERAMIC	560PF	KPYTEQ
C118		*	CC45FSL1H331JN	CERAMIC	330UF	KPYTEQ
C119		*	CE04KW1H2R2M	ELECTRO	2.2UF	KPYTEQ
C120			CE04KW1C100M	ELECTRO	10UF	KPYTEQ
C121			CE04KW1C100M	ELECTRO	10UF	KPYTEQ
C122			CE04KW1H220M	ELECTRO	22UF	KPYTEQ
C123			CE04KW1H100M	ELECTRO	10UF	KPYTEQ
C153_154			CK45FF1H103ZMM	CERAMIC	0.010UF	KPYTEQ
C155_156			CE04KW1V4R7M	ELECTRO	4.7UF	KPYTEQ
C201-214		*	CC45FSL1H101JN	CERAMIC	100PF	KPYTEQ
C215			CE04KW1H4R7M	ELECTRO	4.7UF	KPYTEQ
C216			CE04KW1V4R7M	ELECTRO	4.7UF	KPYTEQ
C217			CO93FMG1H223J	MYLAR	0.022UF	KPYTEQ
C218			CE04KW1C331M	ELECTRO	330UF	KPYTEQ
C219			CE04KW1H4R7M	ELECTRO	4.7UF	KPYTEQ
C220			CE04KW1V4R7M	ELECTRO	4.7UF	KPYTEQ
C221			CO93FMG1H223J	MYLAR	0.022UF	KPYTEQ

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C402		*	CC45FSL1H271JN	CERAMIC	270PF	J
C403_404		*	CC45FSL1H101JN	CERAMIC	100PF	J
C406		*	CO93FMG1H223J	MYLAR	2200PF	J
C407		*	CC45FSL1H820JN	CERAMIC	82PF	J
C408		*	CC45FSL1H121JN	CERAMIC	120PF	J
C409		*	CE04KW1H470M	ELECTRO	47UF	50WV
C410		*	CC45FSL1H220JN	CERAMIC	22PF	J
C412		*	CO93FMG1H103J	MYLAR	0.010UF	J
C413		*	CC45FSL1H151JN	CERAMIC	150PF	J
C419		*	CE04KW1E101M	ELECTRO	100UF	25WV
C420		*	CC45FSL1H820JN	CERAMIC	82PF	J
C421		*	CC45FSL1H121JN	CERAMIC	120PF	J
C422		*	CO93FMG1H103J	MYLAR	0.010UF	J
C445		*	CO93FMG1H103J	MYLAR	0.010UF	J
C446		*	CO93FMG1H102J	MYLAR	1000PF	J
C447-450		*	CC45FSL1H101JN	CERAMIC	100PF	J
C451_452		*	CC45FB1H391KMM	CERAMIC	390PF	J
C453_454		*	CE04KW1H3R3M	ELECTRO	3.3UF	50WV
C455_456		*	CO93FMG1H102J	MYLAR	1000PF	J
C457		*	CE04KW2A4R7M	ELECTRO	4.7UF	100WV
C458		*	CC45FSL1H151JN	CERAMIC	150PF	J
C459		*	CC45FF1H103ZMM	CERAMIC	0.010UF	Z
C460		*	CE04KW1H220M	ELECTRO	22UF	50WV
C461_462		*	CC45FB1H102KMM	CERAMIC	1000PF	K
C472		*	CE04KW1E101M	ELECTRO	100UF	25WV
C473-476		*	CE04KW2A4R7M	ELECTRO	4.7UF	100WV
CN101		*	E40-4796-05	PIN ASSY		
CN201		*	E40-9829-05	SOCKET FOR PIN ASSY		
CN202		*	E40-9830-05	SOCKET FOR PIN ASSY		
CN301		*	E40-4609-05	PIN ASSY		
CN302		*	E40-4293-05	FLAT CABLE CONNECTOR		
CN303_304		*	E40-4808-05	PIN ASSY		
CN305		*	E40-4293-05	FLAT CABLE CONNECTOR		
J1		*	E63-0129-05	PHONE JACK		
J2		*	E56-0012-05	CYLINDRICAL RECEPTACLE		
J3		*	E11-0271-05	PHONE JACK		
J3		*	E11-0272-05	PHONE JACK		
J201		*	E56-0014-05	CYLINDRICAL RECEPTACLE		
J202_203		*	E56-0011-05	CYLINDRICAL RECEPTACLE		
J301		*	E63-0095-05	PHONE JACK		
J302		*	E63-1005-05	PHONE JACK		
CN111		*	J19-5626-03	HOLDER		
E5_6		*	J11-0808-05	WIRE CLAMPER		
L1_4		*	L92-0044-05	FERRITE CORE		
L6_8		*	L92-0044-05	FERRITE CORE		
L101		*	L40-1091-17	SMALL FIXED INDUCTOR(1UH)		
L102		*	L40-1001-17	SMALL FIXED INDUCTOR(10UH)		
X101		*	L77-2200-05	CRYSTAL RESONATOR(4.332MHZ)		
R27_28		*	RS14KB3D47JFR	FL-PROOF RS	470	2W
R152		*	RD14NB2E103J	RD	10K	J 1/4W
R153_154		*	RD14NB2E221J	RD	220	J 1/4W
R319-322		*	RD14NB2E271J	RD	270	J 1/4W
R323_324		*	RD14NB2E181J	RD	180	J 1/4W

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D201_202			RD15JS(B)	ZENER DIODE		
D203			HZS51S(B2)	ZENER DIODE		
D203			RD51JS(B2)	ZENER DIODE		
D204			HSS104A	DIODE	KP	
D204			1SS131	DIODE	KP	
D205			HZS8_2S(B2)	ZENER DIODE		
D206			RD8_2S(B2)	ZENER DIODE		
D206			HZS7_5S(B)	ZENER DIODE		
D206			RD7_5S(B)	ZENER DIODE		
D207			HZS11N(B)	ZENER DIODE		
D207			HZS11N(B)	ZENER DIODE		
D211_212			RD11ES(B)	ZENER DIODE		
D211_212			HZS15S(B)	ZENER DIODE		
D302-306			RD15JS(B)	ZENER DIODE		
D302-306			HSS104A	DIODE		
D302-306			1SS131	DIODE		
D313-317			HSS104	DIODE		
D313-317			1SS133	DIODE		
D327-331			HSS104	DIODE		
D327-331			1SS133	DIODE		
D333-334			HSS104	DIODE		
D333-334			1SS133	DIODE		
D351-354			HSS104	DIODE		
D351-354			1SS133	DIODE		
D401-404			1B4B41	DIODE		
D405			S5688B	DIODE		
D405			1SR139-400	DIODE		
D406_407			HZS7_5S(B)	ZENER DIODE		
D406_407			RD7_5S(B)	ZENER DIODE		
D411_412			HSS104	DIODE		
D411_412			1SS133	DIODE		
D413		*	HZS4_7N(B)	ZENER DIODE		
D413		*	RD4_7ES(B)	ZENER DIODE		
IC1			UPD78058GC-902	MI-COM IC		
IC2			S-806D-Z	ANALOGUE IC		
IC3			ICOP AMP X2)	IC(OP AMP X2)		
IC5			ICVOLTAGE REGULATOR/ +5V)	IC(VOLTAGE REGULATOR/ +5V)		
IC6			ANALOGUE IC	ANALOGUE IC		
IC7			ICVOLTAGE REGULATOR/ -5V)	IC(VOLTAGE REGULATOR/ -5V)		
IC8			MOS-IC	MOS-IC		
IC8			ICVOLTAGE REGULATOR/ +5V)	IC(VOLTAGE REGULATOR/ +5V)		
IC8			ANALOGUE IC	ANALOGUE IC		
Q201			2SD2061	TRANSISTOR		
Q202			2SB1370	TRANSISTOR		
Q203			2SC2458(Y,GR)	TRANSISTOR		
Q203			2SC3311A(Q,R)	TRANSISTOR		
Q204			2SA1048(Y,GR)	TRANSISTOR		
Q204			2SA1309A(Q,R)	TRANSISTOR		
Q205			2SD2061	TRANSISTOR		
Q206_207			2SC2458(Y,GR)	TRANSISTOR		
Q206_207			2SC3311A(Q,R)	TRANSISTOR		
Q208			2SC2458(Y,GR)	TRANSISTOR		
Q208			2SC3311A(Q,R)	TRANSISTOR		
Q209			DTA113ZSA	FEET	KP	
Q210			UN4119	DIGITAL TRANSISTOR	KP	
Q210			UN4119	DIGITAL TRANSISTOR	KP	

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C222			CE04KW1C331M	ELECTRO	330UF	16WV
C223			CE04KW1H4R7M	ELECTRO	4.7UF	50WV
C224			CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C225			CE04KW1H4R7M	ELECTRO	4.7UF	50WV
C226			CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C227			CQ93FMG1H223J	MYLAR	0.022UF	J
C228			CE04KW1V4R7M	ELECTRO	4.7UF	35WV
C229			CE04HW1E100M	NP-ELEC	10UF	25WV
C230			CE04FSL1H220JN	CERAMIC	22PF	J
C231-234			CE04HW1E100M	NP-ELEC	10UF	25WV
C235,236						
C251		*	CE04KW1H100M	ELECTRO	10UF	50WV
C252		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C253		*	CE04KW1H100M	ELECTRO	10UF	50WV
C254-258		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C259		*	CK45FB1H102KMM	CERAMIC	1000PF	K
C260		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C261		*	CE04KW1H100M	ELECTRO	10UF	50WV
C262		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C263		*	CE04KW1H100M	ELECTRO	10UF	50WV
C264		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C265		*	CE04KW1H100M	ELECTRO	10UF	50WV
C266		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C267		*	CE04KW1H100M	ELECTRO	10UF	50WV
C268		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z
C301,302		*	CE04KW2A4R7M	ELECTRO	4.7UF	100WV
C303,304		*	CC45FSL1H271JN	CERAMIC	270PF	J
C305-308		*	CC45FSL1H101JN	CERAMIC	100PF	J
C311,312		*	CO93FMG1H222J	MYLAR	2200PF	J
C313,314		*	CC45FSL1H820JN	CERAMIC	82PF	J
C315,316		*	CC45FSL1H121JN	CERAMIC	120PF	J
C317,318		*	CE04KW1H470M	ELECTRO	47UF	50WV
C319,320		*	CC45FSL1H220JN	CERAMIC	22PF	J
C323,324		*	CO93FMG1H103J	MYLAR	0.010UF	J
C325,326		*	CC45FSL1H151JN	CERAMIC	150PF	J
C337,338		*	CE04KW1E101M	ELECTRO	100UF	25WV
C339,340		*	CC45FSL1H820JN	CERAMIC	82PF	J
C341,342		*	CO93FMG1H103J	MYLAR	0.010UF	J
C343,344		*	CE04KW2A4R7M	ELECTRO	4.7UF	100WV
C351,352		*	CC45FSL1H271JN	CERAMIC	270PF	J
C353,354		*				
C355-358		*	CC45FSL1H101JN	CERAMIC	100PF	J
C361,362		*	CO93FMG1H222J	MYLAR	2200PF	J
C363,364		*	CC45FSL1H820JN	CERAMIC	82PF	J
C365,366		*	CC45FSL1H151JN	CERAMIC	120PF	J
C367,368		*	CE04KW1H470M	ELECTRO	47UF	50WV
C369,370		*	CC45FSL1H220JN	CERAMIC	22PF	J
C372,374		*	CO93FMG1H103J	MYLAR	0.010UF	J
C375,376		*	CC45FSL1H151JN	CERAMIC	150PF	J
C377,378		*	CE04KW1E101M	ELECTRO	100UF	25WV
C387,388		*	CC45FSL1H100DN	CERAMIC	82PF	J
C389,390		*	CC45FSL1H820JN	CERAMIC		
C391,392		*	CC45FSL1H121JN	CERAMIC	120PF	J
C393,394		*	CO93FMG1H103J	MYLAR	0.010UF	J
C395		*	CC45FSL1H101JN	CERAMIC	100PF	D
C396		*	CC45FSL1H100DN	CERAMIC	10PF	
C401			CE04KW2A4R7M	ELECTRO	4.7UF	100WV
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R369-372			RD14NB2E271J	270	J	1/4W
R373,374			RD14NB2E181J	180	J	1/4W
R410,411			RD14NB2E271J	270	J	1/4W
R412			RD14NB2E181J	180	J	1/4W
R463,466			RD14NB2E471J	470	J	1/4W
R478			RD14NB2E332J	3.3K	J	1/4W
R479			RD14NB2E472J	4.7K	J	1/4W
R480			RD14NB2E391J	390	J	1/4W
VH1_2			R31-0063-05	VARIABLE RESISTOR		
K301,302			S76-0028-05	MAGNETIC RELAY		
S1_10			S70-0031-05	TACT SWITCH	KPYTEQ	
S11			S70-0031-05	TACT SWITCH	KPYTEQ	
S12_19			S70-0031-05	TACT SWITCH	KPYTEQ	
S20			S70-0031-05	TACT SWITCH		
S21_28			S70-0031-05	TACT SWITCH		
S29			S70-0031-05	TACT SWITCH		
S30_33			S70-0031-05	TACT SWITCH		
S201			S62-0034-05	SLIDE SWITCH		
S34			T99-0559-05	ROTARY ENCODER		
S35			T99-0571-05	ROTARY ENCODER		
D1_4			HSS104	DIODE		
D101			1SS133	DIODE		
D101			HSS104A	DIODE		
D101			1SS131	DIODE		
D102			HSS104	DIODE		
D102			1SS133	DIODE		
D103			HSS104A	DIODE		
D107,108			1SS131	DIODE		
D107,108			1SS133	DIODE		
D109			HSS104	DIODE		
D109			1SS133	DIODE		
D110-115			HSS104	DIODE		
D110-115			1SS133	DIODE		
D151,152			HZ53.3N(B2)	ZENER DIODE		
D151,152			RD3.3ES(B2)	ZENER DIODE		
D153			HZ311N(B2)	ZENER DIODE		
D153			RD11ES(B2)	ZENER DIODE		
D201,202			HSS104	DIODE		
D201,202			1SS133	DIODE		
D205,206			HSS104	DIODE		
D205,206			1SS133	DIODE		
D301-304			HSS104	DIODE		
D351-354			HSS104	DIODE		
D351-354			1SS133	DIODE		
D351-354			HSS104	DIODE		
D401,402			1SS133	DIODE		
D401,402			HSS104	DIODE		
D451,452			HZ524N(B)	ZENER DIODE		
D451,452			RD24ES(B)	ZENER DIODE		
D453,457			HSS104	DIODE		
D453,457			1SS133	DIODE		
D458			HZ55.1S(B2)	ZENER DIODE		
D458			RD5.1US(B2)	ZENER DIODE		
D458						

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Ref. No	Add- ress	New Parts	Parts No.	Description	Desti- nation	Re- marks
D471,472			HSS104A	DIODE		
D471,472			1SS131	ZENER DIODE		
D473			HZS18N(B2)	ZENER DIODE	KPYCM	
D473			RD18ES(B2)	ZENER DIODE		
D474			HZS16N(B2)	ZENER DIODE		
D474			HZS8.2N(B2)	ZENER DIODE		
D474			RD16ES(B2)	ZENER DIODE	TEQ	
D474			RD8.2ES(B2)	ZENER DIODE	KPYCM	
D475			HSS104	DIODE	TEQ	
D475			1SS133	DIODE		
D476			HSS104A	DIODE	KPYCM	
D476			1SS131	DIODE	KPYCM	
D477,478			HSS104A	DIODE		
D477,478			1SS131	DIODE		
D479			HZS11N(B2)	ZENER DIODE		
D479			RD11ES(B2)	ZENER DIODE		
ED1		*	T1-MT-1103K	INDICATOR TUBE		
IC1			NJM4565L-D	ANALOGUE IC		
IC2			NJM4565D-D	IC(OP AMP X2)		
IC101			UPD16311	MOS-IC		
IC102			SAA8579	ANALOGUE IC	KPYTEQ	
IC201,202		*	SN761200N	IC(ANALOG MULTIPLEXER)		
IC203,204			MC14577CP	ANALOGUE IC		
IC301			NJM4565D-D	IC(OP AMP X2)		
Q1_2			2SC2458(Y,GR)	TRANSISTOR		
Q101,102			2SC3311A(Q,R)	TRANSISTOR		
Q101,102			2SC2458(Y,GR)	TRANSISTOR		
Q151			2SC3311A(Q,R)	TRANSISTOR		
Q151			2SA1534A(R,S)	TRANSISTOR		
Q152			2SA1048(Y,GR)	TRANSISTOR		
Q205			2SA1309A(Q,R)	TRANSISTOR		
Q205			2SC2878(B)	TRANSISTOR		
Q206			DTA113ZSA	DIGITAL TRANSISTOR		
Q207-210			UN4119	DIGITAL TRANSISTOR		
Q205			DTC113ZSA	DIGITAL TRANSISTOR		
Q205			DT4219	DIGITAL TRANSISTOR		
Q206			UN4118	DIGITAL TRANSISTOR		
Q207-210			2SC2003(L,K)	TRANSISTOR		
Q301-304			2SA992(F,E)	TRANSISTOR		
Q305-308			2SC2631(R,S)	TRANSISTOR		
Q309,310			2SA1123(R,S)	TRANSISTOR		
Q311,312			2SA1048(Y,GR)	TRANSISTOR		
Q311,312			2SA1309A(Q,R)	TRANSISTOR		
Q351-354			2SA992(F,E)	TRANSISTOR		
Q355-358			2SC2631(R,S)	TRANSISTOR		
Q359,360			2SA1123(R,S)	TRANSISTOR		
Q361,362			2SA1048(Y,GR)	TRANSISTOR		
Q361,362			2SA1309A(Q,R)	TRANSISTOR		
Q401,402			2SA992(F,E)	TRANSISTOR		
Q403,404			2SC2631(R,S)	TRANSISTOR		
Q405			2SA1123(R,S)	TRANSISTOR		
Q406			2SA1048(Y,GR)	TRANSISTOR		
Q406			2SA1309A(Q,R)	TRANSISTOR		

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Q451,452			DTC113ZSA	DIGITAL TRANSISTOR		
Q451,452			UN4219	DIGITAL TRANSISTOR		
Q471			2SA1048(Y,GR)	TRANSISTOR		
Q471			2SA1309A(Q,R)	TRANSISTOR		
Q472			DTC124ESA	DIGITAL TRANSISTOR		
Q472			UN4212	DIGITAL TRANSISTOR		
Q475			2SC1845(F,E)	TRANSISTOR		
Q476			2SA1535(R,S)	TRANSISTOR		
A1			W02-2561-05	ELECTRIC CIRCUIT MODULE		
SWITCH UNIT (X25-588X-XX)						
C1_2		*	CC45FSL1H151JN	CERAMIC		
C3_4			CC40KW1H100M	ELECTRO	J	50WV
C5_6			CQ93FMG1H393J	MYLAR	J	J
C7_8			CQ93FMG1H113J	MYLAR	J	J
C9_10			CE04EWQ102M	ELECTRO	6.3WV	
C11_12			CQ93FMG1H182J	MYLAR	J	J
C13_16			CQ93FMG1H102J	MYLAR	J	J
C17_18		*	CE04KW1E470M	ELECTRO	25WV	
C19_20			CE04FBIH471KMM	CERAMIC	J	J
C21			CF92FV1H104J	MF-C	0.10UF	
C22			CQ93FMG1H102J	MYLAR	1000PF	
C31_40			CC45FSL1H151JN	CERAMIC	150PF	
C51_52			CE04KW1H100M	ELECTRO	10UF	50WV
C53_54		*	CC45FSL1H470JN	CERAMIC	47PF	J
C55_56			CE04KW1E470M	ELECTRO	47UF	25WV
C57			CQ93FMG1H103J	MYLAR	0.010UF	
C58			CQ93FMG1H102J	MYLAR	1000PF	
C71_72		*	CE04KW1H2R2M	ELECTRO	2.2UF	J
C75_76			CC45FSL1H470JN	CERAMIC	47PF	50WV
C77			CQ93FMG1H103J	MYLAR	47PF	J
C78			CQ93FMG1H102J	MYLAR	1000PF	J
C101,102			CC45FSL1H470JN	ELECTRO	2.2UF	50WV
C103,104			CC45FSL1H470JN	CERAMIC	47PF	J
C105,106			CE04KW1H2R2M	ELECTRO	2.2UF	50WV
C107,108			CC45FSL1H470JN	CERAMIC	47PF	J
C109,110		*	CE04KW1H2R2M	ELECTRO	2.2UF	50WV
C111,112			CC45FSL1H470JN	CERAMIC	47PF	J
C113-118			CE04KW1H47M	ELECTRO	2.2UF	50WV
C119			CQ93FMG1H103J	MYLAR	47PF	J
C120			CQ93FMG1H102J	MYLAR	1000PF	J
C122			CQ93FMG1H102J	MYLAR	1000PF	J
C123			CC45FSL1H470JN	ELECTRO	2.2UF	50WV
C124			CQ93FMG1H102J	MYLAR	1000PF	J
C125-130		*	CC45FSL1H101JN	CERAMIC	0.010UF	J
C141			CQ93FMG1H103J	MYLAR	0.010UF	J
C142			CQ93FMG1H151K	MYLAR	150PF	K
C143			CQ93FMG1H103J	MYLAR	0.010UF	J
C144			CQ93FMG1H151K	MYLAR	150PF	K
C145			CQ93FMG1H103J	MYLAR	0.010UF	J
C146			CQ93FMG1H151K	MYLAR	150PF	K
C147-149		*	CK45FB1H471KMM	CERAMIC	470PF	K
C150			CE04KW1H100M	NP-ELEC	10UF	50WV
C171-176			CE04KW1H47M	ELECTRO	4.7UF	50WV
C177-182		*	CC45FSL1H151JN	CERAMIC	150PF	J

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C202-208		*	CC45FSL1H101JN CE04KW1V47M CE04KW1C331M CE04KW1V47M CE04KW1C331M	CERAMIC ELECTRO ELECTRO ELECTRO ELECTRO	100PF 4.7UF 330UF 4.7UF 330UF	J 35WV 16WV 35WV 16WV
C213-215			CE04KW1V47M	ELECTRO	4.7UF	35WV
C216			CE04KW1H100M	ELECTRO	10UF	50WV
C217		*	CC45FSL1H100DN CQ93FMG1H222J CE04KW1H100M	CERAMIC MYLAR ELECTRO	10PF 2200PF 10UF	D J 50WV
C218			CC45FSL1H100DN	CERAMIC	10PF	D
C219			CE04KW1H100M	ELECTRO	10UF	50WV
C220		*	CC45FSL1H100DN	CERAMIC	10PF	D
C221		*	CC45FSL1H221JN	CERAMIC	220PF	J
C222		*	CE04KW1H010M	ELECTRO	1.0UF	50WV
C223		*	CC45FBIH471KMM	CERAMIC	470PF	K
C224		*	CE04KW1HR47M	ELECTRO	0.47UF	50WV
C225			CQ93FMG1H223J	MYLAR	0.022UF	J
C226		*	CE04KW1H2R2M	ELECTRO	2.2UF	50WV
C227		*	CC45FBIH332KMM	CERAMIC	3300PF	K
C228		*	CC45FSL1H221JN	CERAMIC	220PF	J
C229		*	CC45FCH1H050CN	CERAMIC	5.0PF	C
C230		*	CC45FCH1H220JN	CERAMIC	22PF	J
C231		*	CC45FSL1H220JN	CERAMIC	22PF	J
C232		*	CC45FSL1H220JN	CERAMIC	22PF	J
C234		*	CE04KW1H010M	ELECTRO	1.0UF	50WV
C235		*	CC45FBIH471KMM	CERAMIC	470PF	K
C236			CE04KW1HR47M	ELECTRO	0.47UF	50WV
C237		*	CQ93FMG1H473J	MYLAR	0.047UF	J
C238		*	CE04KW1H010M	ELECTRO	1.0UF	50WV
C239		*	CC45FF1H472ZMM	CERAMIC	4700PF	Z
C240		*	CC45FSL1H221JN	CERAMIC	220PF	J
C241		*	CC45FCH1H050CN	CERAMIC	5.0PF	C
C242		*	CC45FCH1H220JN	CERAMIC	22PF	J
C243		*	CC45FSL1H270JN	CERAMIC	27PF	J
C244		*	CC45FSL1H220JN	CERAMIC	22PF	J
C245		*	CC45FBIH152KMM	CERAMIC	1500PF	K
C246			CE04KW1V47M	ELECTRO	4.7UF	35WV
C247			CE04KW1H100M	ELECTRO	10UF	50WV
C248			CQ93FMG1H153J	MYLAR	0.015UF	J
C249		*	CQ93FMG1H683J CC45FSL1H100DN	MYLAR CERAMIC	0.068UF 10PF	D
C253			CE04HW1E100M	NP-ELEC	10UF	25WV
C254-256			CE04KW1H100M	ELECTRO	10UF	50WV
C257-258		*	CC45FSL1H220JN	CERAMIC	22PF	J
C301-302		*	CC45FF1H103ZMM	CERAMIC	0.010UF	Z
C303		*	CE04KW1H100M	ELECTRO	10UF	50WV
C304		*	CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C305			CE04KW1H100M	ELECTRO	10UF	50WV
C306		*	CC45FF1H03ZMM	CERAMIC	0.010UF	Z
C307-309		*	CC45FSL1H101JN	CERAMIC	100PF	J
C310		*	CE04KW1H100M	ELECTRO	10UF	50WV
C311		*	CK45FE1H103ZMM	CERAMIC	0.010UF	Z
C312		*	CE04KW1H100M	ELECTRO	10UF	50WV
C313		*	CC45FF1H03ZMM	CERAMIC	0.010UF	Z
C314		*	CE04KW1H100M	ELECTRO	10UF	50WV
C315-316		*	CK45FF1H103ZMM	CERAMIC	0.010UF	Z

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Ref. No	Add-ress	New Parts	Description	Parts No.	Desti-nation	Re-marks
Q202			TRANSISTOR	2SA1048(Y,GR)		
Q202			TRANSISTOR	2SA1309A(Q,R)		
Q203-205			TRANSISTOR	2SC2458(Y,GR)		
Q206,207			TRANSISTOR	2SC3311A(Q,R)		
Q208			DIGITAL TRANSISTOR	2SC2878(B)		
Q208			DIGITAL TRANSISTOR	DTA113ZSA	MYCTEQ	
Q209			DIGITAL TRANSISTOR	UN4119	MYCTEQ	
Q210			DIGITAL TRANSISTOR	DTIC113ZSA	MYCTEQ	
Q210			DIGITAL TRANSISTOR	UN4219		
Q211			DIGITAL TRANSISTOR	DTA113ZSA		
Q212			TRANSISTOR	UN4119		
Q212			TRANSISTOR	2SC2458(Y,GR)		
Q212			TRANSISTOR	2SC3311A(Q,R)		
Q213,214			TRANSISTOR	2SC2003(L,K)		

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C318			ELECTRO	CE04KW1C331M	MYCTEQ	
C319		*	CERAMIC	CK45FF1H103ZMM	MYCTEQ	
C320,321		*	CERAMIC	CK45FF1H103ZMM		
C322-324		*	CERAMIC	CC45FSL1H101JN	MYCTEQ	
C325		*	ELECTRO	CE04KW1H100M		
C326		*	CERAMIC	CK45FF1H103ZMM		
C327		*	ELECTRO	CE04KW1H100M		
C328		*	CERAMIC	CK45FF1H103ZMM		
C329		*	CERAMIC	CC45FSL1H100DN		
TC201			CERAMIC TRIMMER CAPACITOR(30PF)	C05-0097-05		
TC202			CERAMIC TRIMMER CAPACITOR(30PF)	C05-0097-05	MYCTEQ	
CN1			SOCKET FOR PIN ASSY	E40-9832-05		
CN2			SOCKET FOR PIN ASSY	E40-9830-05		
CN201			SOCKET FOR PIN ASSY	E40-9831-05		
CN202			SOCKET FOR PIN ASSY	E40-9832-05		
J1 ,2			PHONO JACK	E63-0139-15		
J3 ,4			PHONO JACK	E63-0169-05		
J201			PHONO JACK	E63-0162-05		
J202			PHONO JACK	E63-0163-05		
L201			SMALL FIXED INDUCTOR(22UH,K)	L40-2201-17	MYCTEQ	
L202			CRYSTAL RESONATOR(14.31818M)	L40-2201-17		
X201		*	CRYSTAL RESONATOR(503.5K)	L77-2201-05		
X202		*	CRYSTAL RESONATOR(17.73447M)	L78-0272-05	MYCTEQ	
X203			RESONATOR	L77-2202-05		
X204			RESONATOR	L78-0300-05	MYCTEQ	
R317			RD	RD14NB2E470J	MYCTEQ	
R326			RD	RD14NB2E100J	MYCTEQ	
R327			RD	RD14NB2E100J	MYCTEQ	
R328			RD	RD14NB2E47J	MYCTEQ	
D11-13			DIODE	HSS104		
D11-13			DIODE	1SS133		
D201,202			DIODE	HSS104		
D201,202			DIODE	1SS133		
IC1 -6			IC(OP AMP X2)	NJM4580D		
IC1 -6			IC(OP AMP X2)	NJM4580D-D		
IC7 ,8			MOS-IC	TC9164N		
IC9			MOS-IC	TC9162N		
IC201		*	IC(ANALOG MULTIPLEXER)	SN761200N		
IC202			IC(ANALOG MULTIPLEXER)	TC74HC4051AP		
IC203			ANALOGUE IC	MC14577CP		
IC204		*	CUSTOM IC	MB90089PF-188		
IC205		*	IC(SYNC SEPARATION)	MM1067XD		
IC206		*	CUSTOM IC	MB90089PF-188		
IC207			IC(SYNC SEPARATION)	MM1067XD		
IC208		*	IC(ANALOG MULTIPLEXER)	TC74HC4053AP		
IC209			ANALOGUE IC	LA7950		
Q1 -6			TRANSISTOR	2SC2878(B)		
Q7			DIGITAL TRANSISTOR	DTA124ESA		
Q7			DIGITAL TRANSISTOR	UN4112		
Q8 ,9			TRANSISTOR	2SC2458(Y,GR)		
Q8 ,9			TRANSISTOR	2SC3311A(Q,R)		
Q201			TRANSISTOR	2SC2458(Y,GR)		
Q201			TRANSISTOR	2SC3311A(Q,R)		

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SPECIFICATIONS

AUDIO section

Rated power output during STEREO operation

150 watts per channel minimum RMS, both channels driven, at 6 Ω from 20 Hz to 20 kHz with no more than 0.03 % total harmonic distortion.(FTC)

Rated power output during SURROUND operation

FRONT
(1kHz, 0.7% T.H.D. at 6 Ω) 150 W + 150 W
CENTER
(1kHz, 0.7% T.H.D. at 6 Ω) 150 W
SURROUND
(1kHz, 0.7% T.H.D. at 6 Ω) 150 W + 150 W

Total harmonic distortion 0.003%(1 kHz, 75W, 6 Ω)

Frequency response

CD 5 Hz ~ 85 kHz, +0.5 dB, -3 dB

Signal to noise ratio (IHF'66)

PHONO (MM) 77 dB

CD 97 dB

Input sensitivity / impedance

PHONO (MM) 2.5 mV / 47 k Ω

CD 200 mV / 47 k Ω

Output level / impedance

TAPE REC 200 mV / 470 Ω

PRE OUT (FRONT, CENTER, SURROUND, SUBWOOFER)

.....1 V / 1.2 k Ω

Tone control

BASS ± 10 dB (at 100 Hz)

TREBLE ± 10 dB (at 10 kHz)

LOUDNESS control

VOLUME at -40dB level...+7 dB(100 Hz), +3 dB(10 kHz)

DIGITAL AUDIO section

Sampling frequency 32 kHz, 44.1 kHz, 48 kHz

Input level / impedance / wave length

Optical-15 dBm ~ -21 dBm, 600 nm ± 30 nm

Coaxial 0.5 Vp-p / 75 Ω

VIDEO section

Video format NTSC

VIDEO inputs / outputs

VIDEO (composite) 1 Vp-p / 75 Ω

S-VIDEO (luminance signal) 1 Vp-p / 75 Ω

(chrominance signal) 0.286 Vp-p / 75 Ω

FM tuner section

Tuning frequency range 87.5 MHz ~ 108 MHz

Usable sensitivity (MONO)

.....1.6 μ V (75 Ω) / 15.2 dBf (75 kHz DEV., SINAD 30 dB)

50dB quieting sensitivity

STEREO 31.6 μ V (75 W) / 41.2 dBf

Total harmonic distortion (1 kHz)

(for U.S.A. and Canada)

MONO 0.2 % (65 dBf input)

STEREO 0.5 % (65 dBf input)

(except for U.S.A. and Canada)

MONO 0.6 % (65 dBf input)

STEREO 0.7 % (65 dBf input)

Signal to noise ratio (1 kHz, 75 kHz DEV.)

MONO 75 dB (65 dBf input)

STEREO 68 dB (65 dBf input)

Stereo separation (1 kHz) 40 dB

Selectivity (± 400 kHz)

(for U.S.A. and Canada) 70 dB

(except for U.S.A. and Canada) 50 dB

Frequency response 30 Hz ~ 15kHz, +0.5 dB, -3.0 dB

AM tuner section

Tuning frequency range (for U.S.A. and Canada)

10 kHz step 530 kHz ~ 1,700 kHz

Tuning frequency range (except for U.S.A. and Canada)

9 kHz step 531 kHz ~ 1.602 kHz

10 kHz step 530 kHz ~ 1.610 kHz

Usable sensitivity (30% mod., S/N 20 dB)

.....16 μ V / (600 μ V/m)

Signal to noise ratio (30 % mod. 1 mV input) 48 dB

Relay and IR IN/OUT section (for U.S.A. and Canada only)

RELAY CONTROL terminal

Maximum output current 20 mA

Operating voltage 12 V

Output impedance 470 Ω

IR RECEIVER IN terminal

Maximum output current 20 mA

Operating voltage 12 V

Output impedance 470 Ω

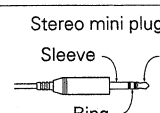
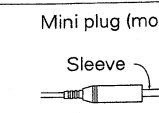
IR REPEATER CONTROL terminals

Maximum output current 20 mA

Operating voltage 12 V

Output impedance 470 Ω

Shape of plug to be connected

IR RECEIVER IN and RELAY CONTROL	IR REPEATER OUT
	

IR IN/OUT specification

Terminal	IR RECEIVER IN	IR REPEATER OUT
To Tip	Signal	Signal
To Ring	Ground	—
To Sleeve	+12 V	Ground

RELAY CONTROL specification

Status	Power off	Power on	Power on and when switch to video input
To Tip	0 V	0 V	+12 V
To Ring	0 V	+12 V	+12 V
To Sleeve	Ground	Ground	Ground

KR-V999D/1090VR

GENERAL

Power consumption 4 A

AC outlet

SWITCHED 2 (total 90 W, 0.75 A max.)

Dimensions.....W : 440 mm (17-5/16")

H : 162 mm (6-3/8")

D : 392 mm (15-7/16")

Weight (Net) 13 kg (28.7 lb)

RF Demodulator (DEM-999D) (only KR-V999D C,M,T type)

Input level

AC-3 RF.....50 mV p-p ~ 200 mV p-p

RF Frequency response 2.88 MHz ~ ± 144 kHz

Output level / Impedance

Coaxial.....0.5 Vp-p / 75 Ω

Dimensions.....W: 89 mm

H : 35 mm

D : 101 mm

Weight (Net) 200 g



KENWOOD follows a policy of continuous advancements in development. For this reason specifications may be changed without notice.